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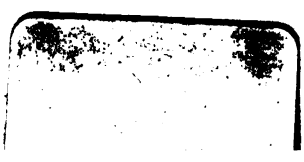

STATISTICAL SURVEY

OF THE

COUNTY OF KILDARE,

WITH

OBSERVATIONS

ON THE

MEANS OF IMPROVEMENT;

DRAWN UP FOR THE CONSIDERATION, AND BY DIRECTION

OF

THE DUBLIN SOCIETY.

BY

THOMAS JAMES RAWSON, ESQ.

A MEMBER.

"And he gave it for his opinion, that whoever could make two ears of "corn, or two blades of grass, to grow upon a spot of ground, where "only one grew before, would deserve better of mankind, and do more "essential service to his country, than the whole race of politicians "put together."

SWIFT.

DUBLIN:

PRINTED BY GRAISBERRY AND CAMPBELL, 10, BACK-LANE,
PRINTERS TO THE DUBLIN SOCIETY.

1807.

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TO THE READER.

This REPORT is at present printed and circulated for the purpose merely of procuring further information, respecting the state and husbandry of this district, and of enabling every one interested in the welfare of this country to examine it fully, and contribute his mite to its improvement.

The Society do not deem themselves pledged to any opinion given by the Author of this Survey; and they desire, that nothing contained in it be considered as their sentiments; they have only published it, as the Report of the gentleman, whose name is affixed, and they publish it for the comments and observations of all persons, which they entreat to be given freely, and without reserve.

It is therefore requested, that the observations on reading this work may be returned to the Dublin Society, as soon as may be convenient, and which will meet with the fullest attention in a future edition.

DEDICATION

TO

THOMAS BURGH, ESQ.

VICE-PRESIDENT OF THE DUBLIN SOCIETY, &c. &c.

SIR,

AMONG the very kind partialities you have shown me in numberless instances, during a course of thirty years, you selected me as a fit person to give an account of your much-loved native county.

A variety of untoward circumstances, and particularly ill health, prevented my meeting your wishes as early as I ought; I have laboured to make amends, by embracing every object that I conceived most useful.

Your great zeal for the improvement of Ireland will induce you to select and cherish whatever may be deserving, and, by kindly pointing out every error and defect, which may have inadvertently been committed, you will add to the very many obligations conferred on

Your very devoted Servant,

THOMAS J. RAWSON.

Cardenton,
June 4th, 1807.

PREFACE.

IT would require the exertions of the most enlightened persons for very many years, and the most liberal public assistance, to be able to answer fully all the inquiries of the Dublin Society. When the Surveyor was honoured by its call, diffident of his single powers, he had hundreds of letters printed and circulated, stating the desires of the Society, and requesting communication on the subjects committed to him; he has not to acknowledge the smallest information; this must plead excuse for any defects or errors in his representations; he shrunk from the attempt, standing alone, and it is only at the very pressing instance of General Vallancey, and several others, who were pleased to overrate his abilities, that he has ventured to come before the public.

He

He conceived the best line he could pursue, was to keep as close as possible to the suggestions of the Society. He was required to give an account of all castles, ancient buildings, and places remarkable for any historic event. In order to keep the answers to all such inquiries from mixing with the agricultural part of the work, he has given the fullest account he could collect of ancient and modern events, as connected with the county, in the Introduction.

As there are few subjects, which the landed interest is more interested in, than the taxation by grand juries, he has given an accurate account of the manner it is usually levied.

If he has taken up too much of the work on the subject of tithes, he can only plead the absolute necessity of modification.

In hopes that this may be read by many of the farmers on a small scale, he has endeavoured to use such language as must be most plain; from the same motive he has avoided going into a Linnean description of plants, grasses, &c.

In

In the course of the work he has introduced sundry publications on farming subjects, for which he was honoured with much of the highest approbation.

If he has been obliged to speak too much of self, it must be recollected, that he had very little assistance, save from the gentleman, who lent his aid on the subject of stock, and from the friendly and most anxious solicitude of General Vallancey, to whom his every acknowledgment is most justly due. One consolation attends him, viz. that this work is only a first attempt, and that any additions, alterations, or amendments, which may be suggested, will be carefully attended to, and have due notice in any further edition.

After answering generally the queries of the Society, he has detailed such improvements in farming in particular situations, as are worth adoption; he trusts it will be evident that, if many of the plans proposed were brought into general use, the face of the country would be clothed with chearfulness and much verdure, and sheep-stock and tillage go arm

in

in arm to further the great work; obstacles to improvement would diminish; all discord and jealousy cease, and the only struggle be amongst all ranks, "how they could best improve their country;" then, indeed, Ireland would enjoy the many blessings poured on it by a most kind Providence, and would shortly vie with Mid-Lothian in improvement, in religion, in morality, and in every virtuous pursuit.

CONTENTS

CONTENTS.

Page

INTRODUCTION - - - i—xlviii

CHAPTER I.

GEOGRAPHICAL STATE AND CIRCUMSTANCES.

SECT 1. *Situation and Extent* - - 1*

2. *Climate* - - - - 2

CHAPTER II.

AGRICULTURE.

SECT. 1. *Mode of Culture* - - 4

2. *Use of Oxen* - - - 5

3. *Nature and Use of Implements of Husbandry* - - - 7

* Note.—Erratum in page 1, PART I. *dele.*

Page

SECT. 4. *Markets for Grain* - - 8
5. *Use of Green Food in Winter* - 9

CHAPTER III.

PASTURE.

SECT. 1. *Nature of it* - - - 10
2. *Breed of Cattle, &c.* - - 11
3. *Grasses* - - - - *ib.*
4. *Mode of Hay-making* - - 12
5. *Dairies, their produce* - - 13
6. *Prices of hides, tallow, wool, and quantity sold* - - - 14

CHAPTER IV.

FARMS.

SECT. 1. *Their size, Farm-houses, and repairs* - - - 14
2. *Nature of Tenures, State of Leases, &c.* - - - - 16

Page

SECT. 3. *Proportion of Working Horses and Bullocks to the size of Farms* 17

4. *General size of Fields;—Nature of Fences;—Mode of Hedge-rows and keeping Hedges* - - 18

5. *Mode of Draining* - - 21

6. *Nature of Manures* - - 22

CHAPTER V.

GENERAL SUBJECTS.

SECT. 1. *Population;—Number and size of villages and towns;—Habitation, fuel, food, and cloathing of the lower ranks;—Price of labour, wages, and provisions* 23

2. *State of Tithe;—its general amount on each article;—What articles are exempt, and what charged by modus* - - - 25

3. *Use of Beer and Spirits* - - 37

4. *State of Roads, Bridges, &c.* - 39

5. *Navigations and Navigable Rivers* 41

Page

SECT. 6. *Fisheries* - - - 49

7. *State of Education, Schools, and Charitable Institutions* - 51

8. *Of Absentee and Resident Proprietors* - - - 52

9. *Of circulation of Money or Paper* 56

10. *Of Manufactures, whether increasing* - - - *ib.*

11. *Of Farming or Agricultural Societies* - - - 58

12. *Of Mills of every kind* - - 65

13. *Of Plantations and Planting, &c. &c.* - - - - 66

14. *Quantity of Bog and Waste Ground;—Possibility and means of improving it;—Obstacles to it, and best means of removing them* - - - 88

15. *Habits of Industry;—Use of the English Language* - - 94

16. *Account of Towers, Castles, Monasteries, ancient Buildings, or places remarkable for any Historical event* - - - 95

17. *Resident Clergy* - - 96

SECT.

Page

SECT. 18. *Whether the County has been surveyed?* - - - 96
19. *Weights, Measures, &c.* - *ib.*

CHAPTER VI.

AN ESSAY ON NEAT CATTLE, SHEEP, &c.

SECT. 1. *Neat Cattle* - - - 97
2. *Sheep* - - - - 106
3. *Swine* - - - - 122
4. *The Horse* - - - 125

CHAPTER VII.

An Essay on the means of converting Grass-lands into Tillage - - - 128

CHAPTER VIII.

On the culture of Potatoes - - 148
An Oration on the history, culture, and qualities of the potatoe, delivered at the public

Page

public commencement of the University of Pensylvania, on the 8th of July, 1790, by William Birch, grandson of the late Doctor Franklin - - 159

CHAPTER IX.

An Essay on the cultivation of Vegetable Crops - - - - 165

CHAPTER X.

On the culture of Rape as food for Cattle - 171

CHAPTER XI.

On the culture of Vetches - - - 176

An Account of various improvements in Agriculture - - - 180

Irrigation - - - - 187

Further Observations on Agricultural improvements - - - - 193

Description of a lifting machine - - 197

CHAPTER

CHAPTER XII.

Page

Irish character, customs, &c. &c. - - 199

CHAPTER XIII.

Tables of Baronies, Towns, Plough-lands, &c. - - - - - 202

ADDENDA - - - - 221

ERRATA.

Introduction, page xviii, line 2 from bottom, for *studied*, read *not studied*.

Of Work, page 18, sect. iv. the plate* is wanting.

29, line 8 from top, for *some*, read *the same*.

36, line 11, read *Right Reverend*.

78, line 21, for *ash*, read *oak*.

82, line 3, read *three square perches*.

90, line 11, read *quickset hedges*.

110, line 1, add *Leicester*.

—, line 7, for *property*, read *propensity*.

133, line 19, for *mince*, read *mix*.

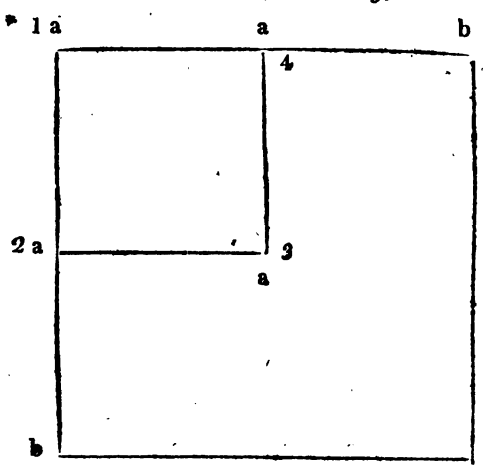
138, line 3, for *fallowing*, read *fattening*.

139, line 4 from bottom, for *first*, read 4 *lb*.

183, line 5 from bottom, for *shade* read *shed*.

189, line 1 from top, after *mounted*, read *him*.

197, line 19, for *seventy*, read *twenty*.



The square a, a, a, a, is supposed to contain one acre; extend the lines at 3 and 4, and they will reach to b, b, the half of the exterior of the large square, so that for double the expense four times the area is enclosed.

INTRODUCTION.

KILDARE county, anciently called Chille-dara, or the Wood of Oaks.* This county was comprised in the ancient Coalan, Cáelan or Galen, an ancient district of Leinster, containing part of the county of Kildare, with part of Wicklow and Carlow; the county of Kildare part is bounded on the east by the Wicklow mountains, on the south and west by the river Barrow, and on the north by the Liffey and part of the bog of Allen. It was called Cáelan or Galen, that is, the woody country, being in the early

* It was also called Kill-dara, from the cell of St. Bridget, first placed under a large oak at Kildare, as also Kill-drag. The vestal fire was preserved, though a remnant of idolatry, in the town of Kildare, after the introduction of christianity by St. Patrick.

ages almost one continued wood, the decay of which produced the great extent of bogs, which cover so much of the country at this day, and by the quantity of timber, with which they abound, bear incontestible marks of their origin. The name is yet retained in one of the boundaries, called the town of Kill-cullan, on the river Liffey, corrupted from Kill-coalan: thence the noble family of Leinster take their motto, *Crom ill a Boo*, or, the district on the crooked water. The chiefs of this country were Hy Cáelen or Mac Kelly, whose principal residence was at or near Rath-ais-Cael,* now corruptly called Rath-ascull, supposed to have been at the ancient castle of Glaise-aile, or the Beautiful Stream. This rath is situated three miles north-east of Athy. Tradition reports, that the last master of this castle was Gicrode-crone-Mac-Kelly, who defended it during his life with much bravery; at his death, the country of the Mac-Kellys was possessed by, and divided between the Fitz-Geralds, Fitz-Henrys, and Keatings. A mile further from Athy is placed the ancient

* There appears to have been much mistake in attributing the erection of raths to the Danes; the word signifies a pledge. Long before the invasions of the Danes, they were constructed by the Irish chieftains and their dependants, and called raths or pledges for the fealty and due subordination of the adjacent country. Had raths been erected by the Danes, they would have been prostrated on their expulsion; instead of being objects of aversion, they are held in utmost reverence by the country people, who would not be bribed to dig or break up the smallest part. C is always pronounced as K.

ancient Carmen, or the enclosed place, which was the Naasteighan, where the states of the southern parts of Leinster met. It is situated on a high gently sloping hill, six miles east of Athy, having an extensive high rath, and near it sixteen conical hills, held sacred by the country people, on which the elders sat in council; near it is a single stone erected, as is supposed, by the worshippers of Beal. Carmen was anathematized in the sixth century, and the place of assemblage of the elders was then removed to the present Naas, one of the shire towns of the county. This hill commands a view of one of the principal scenes of the worship of Beal, called Beal-tine-glas, *the pure fire of Béal*, now called Baltinglas; (many of such stones are erected in different parts of the county.) Carmen is now called Mullimast, or Mullach Mastean, the moat of decapitation. It takes its present name from the base conduct of some adventurers in the sixteenth century, who, having over-run much of the neighbouring country, were resisted by some Irish chieftains, who had properties on the Queen's county side of the Barrow. The adventurers proposed an amicable conference to be held at Carmen; it was acceded to. On the kalends of January (new year's day) in the nineteenth of Elizabeth, the gentlemen of the Queen's county side of the Barrow, then the boundary of the pale, repaired to Carmen as to an amicable confe-

rence, when they were surrounded by three lines of horse and foot, and not one survived. Thirty years since a hole was shewed, where it was said the heads of the victims were buried; at that period it was twenty feet deep, it is now nearly closed.

The successful assassins took possession of the properties of the unfortunate gentlemen, and the barony bears the name of Slieve-Maugue, or the Mountains of mourning. In such detestation is that act held by the country people, that they believe a descendant from the murderers never saw his son arrive at the age of twenty-one. Indeed the properties so acquired have melted away, and got into other hands.

In Kilgowan, at Mr. Nevill's of Furnace, and on the lands of Punchestown near Naas, are stones of the same granite as that at Mullimast; the one at Punchestown* is twenty feet high by thirteen feet, where it enters the earth, tapering to a point; it inclines much towards the east; if used for worship, it must have been of Hebrew original, no workman's hammer having been used in its shaping; it is not within several miles of any quarry of similar stone, and it must take the united strength of forty bullocks to move it on any carriage.

Naas,

* Others with some justice calculate, that these stones were at sundry times erected as emblems of victory; if an Irish peasant be inquired of, he replies that they were erected by Fian M'Comhall and the giants. To dig round them to examine their depth, would be deemed sacrilege.

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AI

Naas,* which became the place of assembly for the elders in the sixth century, was the residence of the kings of Leinster, and contains two moats, together with the ruins of several ancient buildings. In the twelfth century it was fortified by the English, many castles erected, and a priory, founded by the baron of Naas, was dedicated to St. John the Baptist. In the thirteenth century the family of Eustace erected a monastery for Dominicans. This place becoming of some strength and consequence in the course of the civil wars often changed its master; it has now but little remains of its ancient splendour. On the 24th of May, 1798, a number of rebels entered at the different approaches, but after half an hour's conflict were repulsed with much slaughter. A new gaol and court-house has been lately erected.

Within a mile of Naas, are the ruins of one story of a building at Jigginstown, begun by the unfortunate earl of Strafford, Lord lieutenant of Ireland in the reign of Charles I. The bricks and cement used in this building are so excellent, that they can not be separated. In respect to the memory of this nobleman, it is right here to mention, that his zeal for the improvement of the kingdom established the linen

* Naas was called As-leighan, or the convention of Leinster, *as* signifying a convention, *leighan* a spear or axe; it was with battle-axes the Leinster people fought. The country was thence called Leinster; *leighan* what they fought with, and *tir* a country.

linen manufacture in the north of Ireland, at the trifling expense of thirty thousand pounds; and it is just to conclude, that, had not party rage and rancour deprived the government of so useful a servant, his fostering hand would have extended to every part of Ireland.

Killossy. Within a mile of Naas, in 454, Saint Patrick founded an abbey for his nephew St. Auxil, who gave it his name, Kill auxaile; it is now called Killishu, a parish church in the diocess of Kildare.

It was also called Cillusaile, or Ceal-usall; ceal signifies a convent; usall noble; or the noble convent; ceal also signifies a tomb or burying place; thence it was called Ceal Uissean, or the tomb of Uissean, who was reputed the son of Fean M'Cael.

New Abbey, near Kilcullen-bridge. In the year 1460, Sir Rowland Eustace founded a monastery here. In 1582, a lease of this abbey was granted to Edmund Spencer the poet, at 3l. a year; the church, in which was a fine monument of Sir Rowland the founder, son of Sir Edward Eustace of Harristown, many years lord chancellor of Ireland, is gone to ruin. In 1517, lady Elizabeth Zouch, first wife of Gerald, the ninth earl of Kildare, was interred here, near to Allison, mother to the earl her husband. In an adjoining chapel the effigies of a number of sceptered abbots are placed, whence may be concluded

cluded, that many kings presided in this monastery. The steeple fell to the ground in 1764.

Trodden under foot in the church-yard, is a marble slab with the effigy of a knight, named Eustace, his lady, and two children, surrounded by an old text inscription; it is worthy of a better situation.

Old Kilcullen, or Kilcoulan, a monastery founded in the earliest ages of christianity. St. Isernin, the first bishop, died in 469. In 936, and in 944, the town and abbey were plundered. In 1517, Elizabeth, wife of the unfortunate Gerald, earl of Kildare, died and was buried here. Old Kilcullen was a large walled in town with seven gates; one only remains; the town itself is in complete ruin. In the church-yard is a very ancient round tower, neglected and in ruin; to the east is the shaft of a cross of a single stone, ten feet high, and, on the north of the church-yard, a pedestal of another cross. In 1250, the following curious inquisition was held here before five clergy and four laity: they found that father John came to Kilcullen with his two brethren, Sir Nicholas the chaplain, and father Elias, with his cousin Milsandra; that they lived there for eight weeks at the expence of the prior, which amounted to ten shillings; that Sir Nicholas, and Joan maid to father John, were scandalized in the neighbourhood for holding a criminal conversation; and, to suppress

the

the tongue of scandal, John squandered the prior's substance, the full sum of eleven shillings. That John took away with him a quantity of linen yarn, value five shillings, and half a stone of wool, value ten pence, and that Sir Nicholas gave six fleeces of wool for a fat pig for his supper; that a bullock, of the value of five shillings, was lost by neglect: that John lent a cart to carry a millstone, and gave a piece of iron, value two pence, endamaging the prior to the value of ten pence; that on the feast of the purification of the Blessed Virgin the said John, being moved by malice, did refuse to assist the parish priest in the church, by which two pounds of wax, value sixteen pence, were lost; and, that Nicholas carried away with him divers articles to the value of twelve pence.

In 1319, Maurice Jakes built a bridge at Kilcullen-bridge, which induced many of the inhabitants to desert Old Kilcullen. In 1798, a large party of rebels were posted in the church-yard at Old Kilcullen, which is on the top of a very steep hill. Captain Erskine of the ninth dragoons, and captain Cookes of the Romneys were ordered with a small party of cavalry to dislodge them; the two officers gallantly dashed forward, but were not seconded by their men; the rebels, perceiving the tardiness of the dragoons, rushed down the hill, and two most valuable officers were lost to their country. The rebels, exulting in their success, assembled

assembled in great numbers upon the high grounds over the town of Kilcullen, intending to attack it, where General Dundas was quartered; the General marched out eighty of the Suffolk, flanked by captain Robert Latouche's corps of yeomen cavalry; as the General ascended the hill, a fire was commenced by the rebels, who were drawn up ten or twelve deep; the General made the infantry reserve their fire until within fifteen yards of the rebels' lines; they then poured in a volley, killing hundreds; the rebels threw away their arms, brogues, and every incumbrance, and betook to precipitate flight: in the active pursuit of captain Latouche's corps, several hundreds were slain. The exertions of captain Latouche and his corps, on this and other trying occasions, convinced the rebels, that they could not stand against loyalists armed for their king and country. On many other occasions in the county of Kildare, they met with equal discomfiture; a large body of several thousands had taken possession of an old intrenched camp at the hill of Knockawlin,* within a mile of Kilcullen; they learned, that colonel Campbell was marching from Athy with a picked body of troops to dislodge them; they made proposals to General Dundas to lay down their arms, which he accepted, and sent a gentleman to halt

* From *cnoc* a hill, and *aulin* beautiful.

colonel Campbell. Shortly after the farce of surrendering their arms was played before the General, who rode through their lines and received the appearance of submission of upwards of four thousand; they gave up such arms as were completely useless, and three out of four thousand immediately joined their friends at Vinegar-hill in the county of Wexford.

Kildare town. In 453, St. Brigid, the illegitimate daughter of an Irish chieftain, in the fourteenth year of her age received the veil from St. Patrick. In 484, she founded a nunnery here, and an abbey under the same roof for monks; it was afterwards possessed by the regular canons of St. Augustin. She was interred here in 527, on the first of February, on which day her feast is celebrated. Her remains were afterwards removed to the cathedral church of Down. The story, taken from Dido and her bull's hide, is among the legendary tales of St. Brigid; that with such an hide, cut into strings, she surrounded, and was endowed with, the Curragh of Kildare.

In 520, died St. Naithfraich the first abbot, said to have been coachman to to St. Brigid.

In 580, St. Falullah, daughter of Naidfraich, was abbess. In 638, Aid-dubh, or Black Hugh, king of Leinster, abdicated his throne, and was abbot and bishop of Kildare.

In

In 836, the Danes plundered all the territories of Magh Liffe, without suffering an individual to escape; they destroyed Kildare by fire and sword, and carried away the sacred shrines.

In 870, died Morigh M'Broyn, king of Leinster and abbot of Kildare.

In 883, the Danes spoiled the town and its religious houses, carrying into captivity the abbot and two hundred and eighty of his clergy. The abbot was Swyney M'Duff Davorean.

In 887, 89, and 95, the town was ravaged by the Danes, and again in 920, 24, 27, 53, 62, 65, 92, 98, 1012, and 16.

In 1018, all Kildare, except one house, was destroyed by lightning.

In 1038, 40, 71, 89, 99, 1143, and 55, the town was destroyed by fire.

In 1135, Dermot Mac Murrough, king of Leinster, (from whom the Cavanaghs of Borris, county of Carlow, are descended) forcibly took the abbess out of her cloister, and compelled her to marry one of his followers.

In 1220, Henry de Loundres, archbishop of Dublin, put out the fire called unextinguishable, which had been preserved, though a remnant of the pagan idolatry of Baal, from the earliest times by the nuns of St. Brigid. This fire was re-lighted, and continued to burn until the total suppression of monas-

teries; the ruins of the fire-house and nunnery still remain.

In 1309, a parliament was held here.

In 1643, it was a garrison town, commanded by lord Castlehaven.

In 1647, the town was taken by the king's forces, but shortly after came into the hands of the Irish; it was retaken in 1649 by the marquis of Ormond.

In the twenty-seventh of Elizabeth, a grant was made to Anthony Deeringe of the monastery, castle, town, and fields of Kildare.

Gray Abbey, is situated on the south side of the town. In 1260, a monastery was erected by the lord William De Vescy; the building was completed by Gerald Fitz-Maurice, lord Offaley, who was interred here in 1286, since which period the noble family of Fitz-Gerald have been generally buried in the cathedral church. Kildare boasts one of the loftiest towers in Ireland. Though the town and tower stand on a very elevated situation, such is the peculiar shape of the adjacent grounds, that the town cannot be approached by any of its numerous roads, without losing sight of the town, when within a quarter of a mile of it.

In 1798, the rebels got possession of the town, and committed several excesses. General Duff marched from Limerick to open the communication with the capital; when he arrived at Kildare, he found the town

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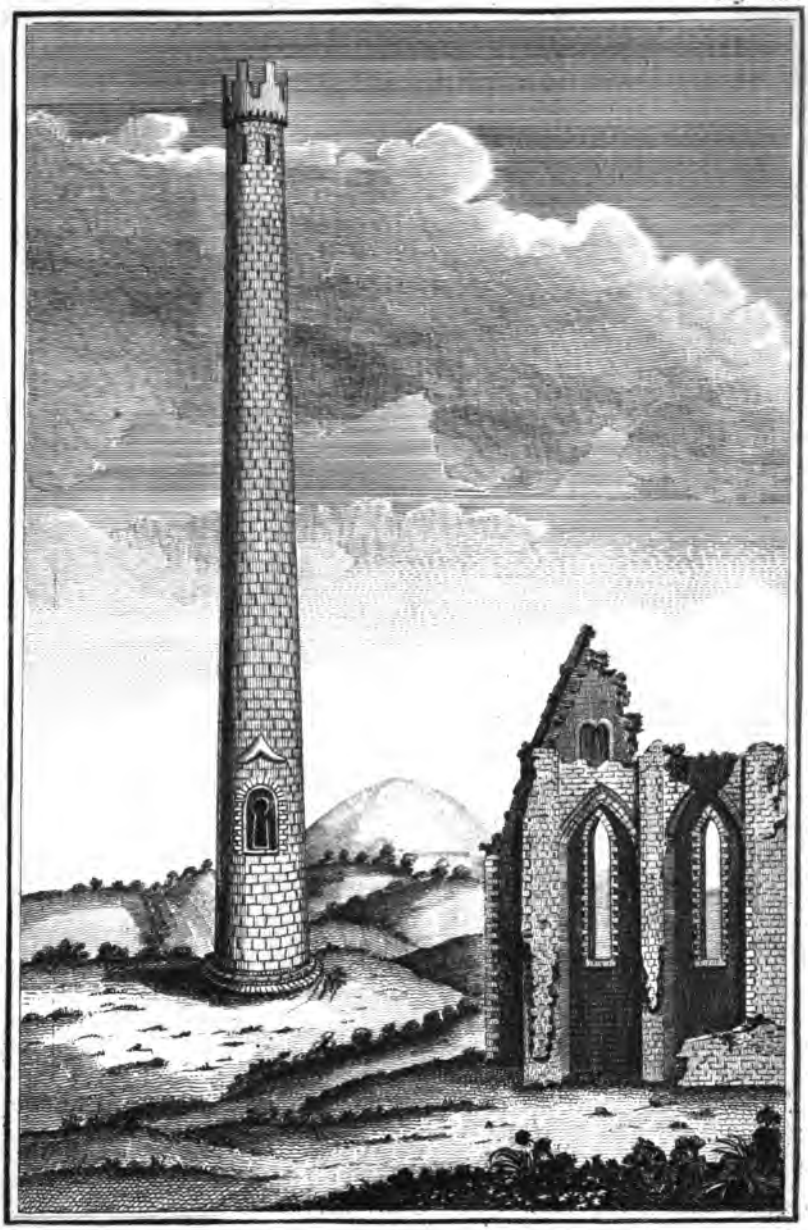


ROUND TOWER at KILDARE.

town in ruins, and that the rebels had collected at the Gibbet Rath on the Curragh, he sent an officer to require them to lay down their arms; they replied by some mad men amongst them firing at the officer; the General gave orders to charge, and a dreadful carnage ensued.

Kildare tower is in height upwards of one hundred and thirty feet. Giraldus Cambrensis, secretary of Henry II. describes these towers among the wonderful things of Ireland: he calls them *turres ecclesiasticas, quæ more patrio arctæ sunt et rotundae;* that is, ecclesiastical towers, which, after the custom of the country, are narrow and round.

It is erroneous to suppose they were erected by the Danes, as no such structures are at present to be seen in Denmark or any other part of Europe, save two small ones in Scotland, evidently raised by the posterity of the Irish, who accompanied Fergus, in imitation of those in their native country.

Various are the opinions respecting those towers; some call them places of penance, others belfries, and *cloghahd* (the Irish name of them) seems to favour this opinion, as it signifies a steeple with a bell: they are also supposed to have been anchorite pillars, whereon the abbot, most celebrated for austerity, used to watch and pray: thus removed from the earth, they were supposed to hold nearer converse with the Deity.

The

The second opinion seems most probable, as all over the East they have tall, round towers, with balconies at top, whence a person calls the people to public worship at stated hours. As the Irish had all their customs, &c. from Phœnicia, of course they may have had these towers also, and therefore their use must have been the same as those of the East. It is not an improbable conjecture, that those towers in the ages, when learning had almost attained the utmost perfection in Ireland, may have been used as observatories.

Kilrush, three miles and a half west of Old Kilcullen, had an abbey founded in the thirteenth century; it appears to have been intended as a place of defence, as it was surrounded by a ditch of great breadth, faced with masonry ten feet high. In 1642, the earl of Ormond with three thousand foot, five hundred horse, and five field pieces, was detached into the county of Kildare to destroy the possessions of rebels, to relieve the castles, and to strengthen the loyal garrisons: such were the petty expeditions, which suited the genius and views of the chief governors. On his return to Athy he received intelligence that Mountgarrett, attended by the lords Dunboyne and Ikerrin, Roger Moore, Hugh Byrne, and other rebel leaders of Leinster, at the head of eight thousand foot, and some troops of horse, had crossed the Barrow at Mageny-ford, and were posted

to

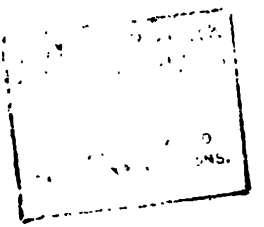
to advantage on the high grounds of Bistown, four miles from Athy. It was resolved in a council of war, that, as their numbers were diminished by garrisons, harrassed, encumbered, and ill provided, they should by no means hazard an engagement, unless the enemy should oppose their march to Dublin. Ormond proceeded on his march with every necessary precaution along the high grounds of Russelstown, Ardscull, Funtstown, and Kilrush, whilst the rebel army moved on in the same direction along the high grounds of Ballyndrum, Glassealy, and Narraghmore, and drew up their army most advantageously on the high grounds of Kilrush and Bullhill, thus completely intercepting Ormond's further progress, and a general engagement became unavoidable: the left wing of the Irish was broken by the first charge; the right, animated by their principal leaders, maintained the contest for some time, and retired in good order to a neighbouring eminence, since called Battlemount, but here they broke, fled, and were pursued across the grounds they had marched over in the morning; the line of pursuit is discoverable by the number of human bones turned up at Glassealy, when the earth is stirred a foot deep. This victory was considered of so much consequence, that Ormond was presented by the commons with a jewel, value £500.

Monastereven. In the seventh century St. Abban founded a sumptuous abbey, and granted the privilege of a sanctuary; St. Evin from South Munster filled it with monks. The consecrated bell, which belonged to this saint, called Bernan Empin, was on solemn trials sworn on, and was committed to the care of the M'Egans, hereditary chief justices of Munster. This abbey, with its appendages, became the property of the ancient noble family of O'Moore; it has been sumptuously repaired, preserving its venerable appearance, and the name of Moore-abbey, by the present marquis of Drogheda.

Here is also a very noble building, the parish church, with a handsome steeple; the church-yard is walled in, and served a party of the rebels as a temporary protection, when three thousand in 1798 attacked and seized on the town; they were soon dispossessed by the gallantry of forty yeomen cavalry, and thirty-six infantry, newly raised under the command of that experienced steady officer, Frederick Haysted, assisted by his relatives of the Bagot family. On this occasion sixty-five rebels lay dead in the streets; the remainder sought safety in flight. Near the close of the conflict, a lad of eighteen, son of Mr. Robert Nicolson, was carried to his father's house mortally wounded; more attentive to his father's consolation, than to his dying pangs, on being told the rebels fled on all sides, he exultingly seized

his

MOORE ABBEY.



his father's hand, entreating him not to lament his loss, as he was most happy in dying in so good a cause. The spirit, which had borne him up in this heroic exertion, now ceased; he sunk unknown to the great world, and, *without a stone to record his early matchless worth.*

Rheban, Righ-ban, or the habitation of the king, anciently called Raiba, though now in ruins, without any remains of its former consequence, was in the second century one of the inland cities of Ireland; it is situated on the western bank of the Al Berba, Barragh, or boundary river, now called Barrow, navigable from Monastareven to Ross and Waterford. Two miles above Athy, near it is a very high conical hill or mount, supposed to be raised over some king or chieftain. This, with Dunamase and the adjoining district, was erected into a barony, and granted in fee to Richard De St. Michael, created baron of Rheban.

In 1325, in the absence of the English settlers, Dunamase, Rheban, and all their dependencies were taken by O'Moore. In 1424, Thomas Fitz-Gerald, lord Offaley, and afterwards seventh earl of Kildare, marrying Dorothea, daughter of Anthony O'Moore, received in dower the manors of Rheban and Woodstock. Rheban was found of consequence to the first English settlers, who repaired and strengthened the castle, as also the opposite one of Killberry, both

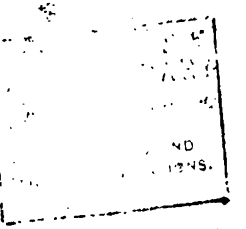
intended to protect a ford on the Barrow. The weirs at Bert and Milltown have thrown back water not only on the ford but on thousands of acres. In 1642, the marquis of Ormond took Rheban from the rebels. In 1648, it was taken by Owen Roe O'Neal; he was defeated by Lord Inchiquin, who compelled him to surrender Rheban and Athy. The fair, formerly held at Rheban on St. Michael's day, O. S. has been long removed to Athy.

St. Woolstan's, two miles south of Leixlip. In 1202, a priory was founded here for canons of the order of St. Victor by Adam De Hereford. In 1308, John Ledleer erected a bridge over the Liffey. In the twenty-eighth of Henry VIII. Richard Weston the prior surrendered; the priory, with very extensive possessions, was granted at the rent of two knights fees to Allen of Norfolk, master of the rolls, and afterwards lord chancellor; it continued in the Allen family to the year 1752.

Cloncurry. In 1347, a Carmelite friary was founded here by John Roche; by thirty-fifth of Henry VIII. granted to William Dixon.

Clane. In 584, St. Ailbe founded a priory. In 1162, a synod of twenty-six bishops and a number of abbots passed a decree, that no person should be admitted professor of divinity in any church in Ireland, who had studied at Armagh. Alfred, the most enlightened monarch of England, received his education

RHEBAN.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education at Armagh, as did the sons of the English nobility and gentry for several centuries: such was the state of education in Ireland at this period, that of the numberless places for the instruction of youth of every nation, Armagh alone contained three thousand pupils. In 1287, Gerald Fitz-Maurice, lord Offaley, was interred at Clane; he had founded a Franciscan friary. By twenty-fourth of Henry VIII. this friary and sundry appurtenances were assigned to Robert Eustace, John Trevor, Richard Field, Richard Roche, and Edward Brown in capite.

Great Conal. In 1202, a priory was founded here by Meyler Fitz-Henry, whose father was natural son of Henry I.; he came into this kingdom with the first adventurers. In 1406, the prior and twenty-eight English attacked and put to flight two hundred well armed Irish on the Curragh. The buildings, which were pretty extensive, have gone greatly to decay; two Gothic windows have resisted the ravages of time.

Kileock. The virgin St. Coca is honoured on the 6th of June.

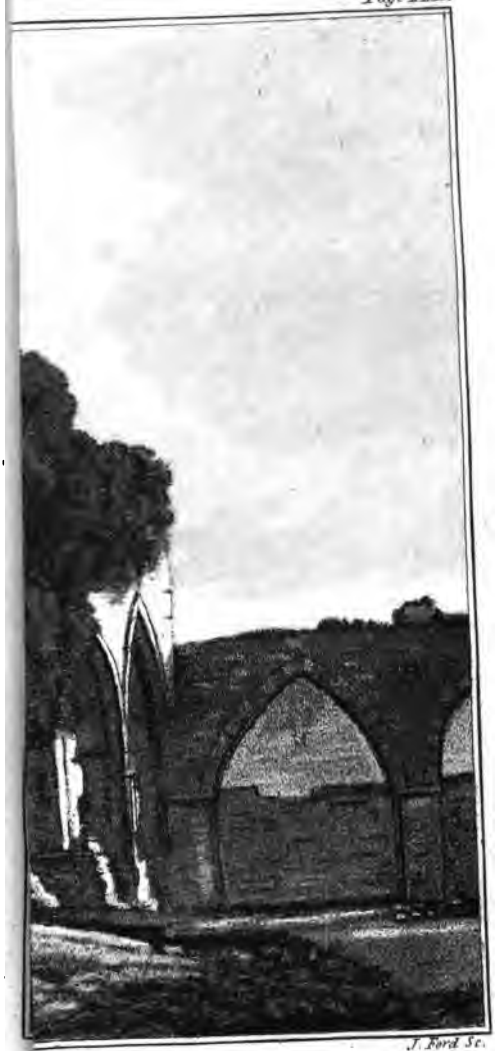
Clonard, on the borders of Meath. An abbey for regular canons was founded here; it was several times sacked, and the religious put to the sword, particularly by Dermot M'Murchad, the introducer of Earl Strongbow, by whose forces he was assisted.

By

was founded on the east side of the bridge, in 1233, by the families of Boises and Hogans. By the thirty-fifth of Henry VIII. it was granted to Martin Pallas, together with the fields of Ardree, the island in the Barrow, and two fishing weirs, at the annual rent of 2s. 8dh. In 1315, the Scots under Robert de Bruce gained a battle at Ascul, or Arstol, in the neighbourhood of Athy, which was plundered; a remarkable high rath, commanding a great extent of country, stands where the battle was fought, but no trace of any house or town, save, as before-mentioned, the ancient castle, the seat of the Mac Kellys. In this battle, Hammond Le Grose, Sir William Prendergast, and John Lord De Bonneville, on the part of the Irish, and Sir Fergus Andressan, and Sir Walter Murray, of the Scottish party, were slain and buried in Athy.

Castledermot, anciently Tristledermot, was formerly a large fortified town, and the residence of the kings of Leinster, bearing the name of Dermot. In 500, an abbey was founded here by St. Dermot, whose feast is kept on the twenty-first of June. The famous Cormac M'Culienan, afterwards archbishop of Cashel, was educated here; he was slain in 907, and buried here. In the reign of king John, a priory was founded here by Walter De Riddlesford.

In



J. Ford Sc.

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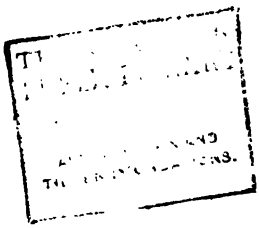

In 1264, such was the power of the Geraldines, that Richard De Rupella, Lord Justice of Ireland, Lord Theobald Boteler, and Lord John Cogan, were taken prisoners here by Maurice Fitzgerald, and Fitzmaurice.

In 1312, a Franciscan friary was founded here by Thomas Lord Offaley.

In 1316, John, eldest son of the earl of Kildare, died at Latreachbrien, and was buried here. Same year the Scots, under Robert and Edward Bruce, destroyed the town, but were soon after defeated by Lord Edmund Butler.

In 1328, Thomas second earl of Kildare died, and was buried here with his wife, daughter of De Burgh, earl of Ulster.

In 1408, Stephen, lord Scroop, died here.

In 1499, a parliament was held here, and an act passed, inflicting penalties on such of the nobles as rode without saddles; the present inn is part of the old parliament house. The ruins of the Franciscan abbey are in good preservation; they are large and spacious, and shew to have been magnificent, particularly one of its windows, two of the aisles, and some of the octagon pillars, which still preserve the outlines of ancient grandeur, and elegant architecture. At the above parliament, a mint was established for coining money. Adjoining the church of this town, is a very fine round tower, used as a belfry;

belfry; the stones, of which it is composed, though in a country abounding with granite, are all of an oblong rounded shape, and the same in size from top to bottom. The first charter school in Ireland was opened here in 1734, for forty children. By the eighth of Elizabeth, a grant was made to Richard Keating of the priory and sundry denominations in Collinstown, Coolrake, Huestown, Kilkea, and Bray in the county of Dublin.

In May, 1798, this town was attacked by a large body of Kildare and Wicklow rebels, on their march to storm Carlow on the Kildare side; they were resisted by Captain Mince of the sixth regiment, with a small party of infantry, and fled at the first discharge; they were pursued for several miles by Sir Richard Butler's troop of yeomen cavalry, who had gallantly volunteered their services.

Graney, near Castledermot. In 1200, Walter De Riddlesford founded a nunnery here, for the order of St. Brigid. In 1409, a patent was granted by Henry IV. which states, that the King, on reflecting that the nunnery of Graane, in the county of Kildare, was so surrounded by Irish enemies, and English rebels, that neither the prioress Margery, nor her tenants, could there dwell, without holding communication with them; and also reflecting, that the said nunnery is a great comfort and support to his liege subjects of the said county, his Majesty grants full license to the prioress and her tenants, to

to hold communication with the said enemies and rebels, and to afford them a safe conduct to come to the nunnery, and to the tenants of the house, and there safely to abide, and with safety to return; to give and to sell bread, wine, ale, and English and Irish cloathing; and that the prioress and her tenants may lawfully pay all fines and ransoms necessary for the good and conveniency of themselves and their property. By thirty-fourth of Henry VIII., this monastery, with very extensive appurtenances in Carlow, Dublin, and Wexford, was granted to Sir Anthony St. Leger.

Moone, near Timolin. A large old monastery of Franciscans, with a large cross and several Irish inscriptions.

Timolin. In the beginning of king John's reign, Robert, son of the lord of Noragh, founded a nunnery for the order of St. Aroacia: this was in possession of six churches, as also part of Grangemillon, called Dromgyrroke, and the church land of Dollardstown. In the general division of this county amongst the first English settlers, Carbrie was given to Myler Fitz-Henry; Naas Offelan to Maurice Fitz-Gerald, from whom deseended the three great families of Kildare, Kerry, and Desmond; Noragh was given to Robert, and Adam Fitz-Hereford had Leixlip, Salt, Cloncurry, Kill, Oughterarde, and Downings, with other appurtenances.

RENTAL

OF THE

EARL OF KILDARE'S ESTATES.

	£.	s.	d.
The manor of Castledermot, set to William Holme and William Wright for forty-one years, from May 1st, 1657, at 100l. the first year, and 120l. the remainder; a fat ox, and forty couple of rabbits - -	100 & duties.		
The lordship of Woodstock and Castlemitchell, set to Daniel Hutchinson alderman, for ninety-nine years, from May 1st, 1657, at 100l. the first forty-one years yearly, and 200l. a year the rest; and six wethers, or 3l.	100 & duties.		
Lordship of Athy. The town of the Inch, for twenty-one years, to Sir Walter Burrowes, from May 1st, 1662; and in the mean while, the 100l. rent goes towards his wife's portion; a fat ox, or 4l. - -	100		
Carried forward - -	300		

Tullygory,

	£.	s.	d.
Carried forward - -	300		
Tullygory, set to Captain Henry Brin for twenty-one years, from May 1st, 1657, at 40l. yearly rent, and six barrels of oats - - -	40		
Russellstown, and the town of Ardscull, set to Mr. Annesley for 70l. for forty-one years - -	70		
Oldraine, to Lieutenant-colonel James Hudson, for twenty-one years, at 10l. a year, and two fat wethers -	10		
The Abbey and Abbey lands waste, worth - - - -	50		
Prussellstown, worth at least -	20		
The town-lands and mills of Athy, worth - - - -	250		
Lordship of Kilkey. The town of Glassealy and Ballydrum, set to Captain John Jordan, for twenty-one years, from May-day, 1657, at 70l. a year, a fat ox, and six fat wethers -	70		
The town of Mullymast, to George Fitz-Gerald, for twenty-one years, from May, 1657, at 30l. a year, and six fat wethers - - -	30		
Carried forward - -	840		

The

	£.	s.	d.
Carried forward - -	840		
The towns of Castleroe and Croaket, for thirty-one years, to Major Thomas Harman, from May 1st, 1657, at 75l. - - -	75		
Great Burton, to Cornet Pinsen, from May 1st, 1657, at 50l. the first year, and 60l. yearly after; a fat ox and six wethers - - -	60		
Ballybirne, to Mr. Charles Fitz-Gerald, for twenty-one years, from May 1st, 1657, at 15l. per annum -	15		
Dollardstown, 40l.; Grange Risnolvan, 35l.; Levetstown, 30l.; Becketstown, 8l.; set to Alderman Raphael Hunt, upon several old leases, at, in all - - -	113		
Allhayes and Cullane, set to Loughn. Lyne, at - - - -	13		
Little Burton, a chiefry of -	3		
Ballymoone, set to Henry Warren, Esq. by an old lease - -	60		
The lordship of Rathangan, after seven or eight years, set to John Parsons for sixty years, at - -	200		
Carried forward - -	1379		

The

	£.	s.	d.
Carried forward - -	1379		
The lordship of Kildare, set for same years, yet to come, to Peasley and Greatrix for the Earl of Stafford's use, for 390l. a year, and, if they throw up the lease, will be so let - -	400		
The lordship of Graney, set to Alderman Hunt by Sir Erasmus Burrowes' old lease, at 120l. a year -	120		
The manor of Drienanstown, set to William Fitz-Gerald, for 100l. a year by old lease, and six wethers, for sixty years, whereof about twenty expired, the next twenty years, 50l. to be abated, and then 100l. a year, so now - - - -	50		
Milelstown, set to Sir Maurice Eustace, for 4l. a year - -	4		
The lordship of Maynooth all to set, worth about 500l. a year - -	500		
Leixlip, the black castle there, sixty acres, worth 15l. a year - -	15		
Clane, fifty acres, set at - -	7	10	
Green-garden in Narraghmore, offered for 10l. and 20l. fine, worth -	15		
Total yearly value in 1636	2490	10	

Note.

	£.	s.	d.
Carried forward - -	2490	10	
Note.—The Earl of Kildare had in 1656, other estates in Ireland; viz. in Drogheda, Limerick, Louth, Down, Meath, Carlow, Wexford, Cork, King and Queen's county - -	524		
	£3014	10	

The whole said estates, if now to be set at the present value, would produce an hundred thousand pounds per annum.

Such has been the astonishing improvement of Ireland in one hundred and fifty years!

The chief proprietors of the county of Kildare have been for centuries the noble family of Fitz-Gerald, descended from Otho, a powerful lord in the time of King Alfred; they flourished in England and Wales, until their kinsman, Richard Strongbow, Earl of Pembroke, engaged Maurice Fitz-Gerald in his expedition to Ireland.

In 1176, King Henry II. gave the barony of Naas, in the county of Kildare, to William Fitz-Maurice.

In 1216, Maurice was put in possession of Maynooth by Henry III.

In 1291, John, the first earl of Kildare, being accused by William Vesey, lord of Kildare, according to the custom of that age challenged Vesey to single

single combat, who to avoid the trial fled into France; whereupon the Earl was declared innocent, and the King bestowed on him Vesey's lordships and manors of Rathangan and Kildare, saying that, though he had conveyed his person into France, he had left his lands behind him.

In 1426, John, the sixth Earl, built the castles of Maynooth and Kilkea.

In 1480, Gerald, the eighth Earl, had a subsidy of thirteen shillings and four pence, granted him by parliament out of every ploughland, towards defraying his charges against Irish rebels and traitors to the state.

In 1496, the watchwords of Crom a boo, (Fitz-Gerald) Butler a boo, (Ormond) Shanet a boo (Desmond) and Gabriagh a boo, (Clanrickarde) were declared by a parliament, held at Drogheda by Sir Edward Poynings, to be unlawful, and a means of nourishing dissensions between noble families. The said Earl was acused before the King of sundry intrigues; his most violent accuser, the Bishop of Meath, asserting, what a man he is, *all Ireland cannot rule yonder gentleman;* the King replied, if it is so, *then he is meet to rule all Ireland:* and accordingly, by letters patent, dated 6th August, 1496, made him Lord lieutenant, and dismissed him with many rich presents. On the Earl's return, he opposed the impostor, Perkin Warbeck, and defeated

feated his designs in Ireland. The castles of Castledermot and Athy, with many others without the county, were erected by this Earl.

Gerald, the eleventh Earl, born in February 1525, was about ten years of age, at the execution of his brother and uncles, sick of the small pox at Donore, near Naas, and by his nurse carefully concealed and conveyed to his sister, Lady Mary O'Connor, in Offaley. The government, harbouring much aversion to even this young unoffending branch of the family, offered large sums for his apprehension; he was sent disguised into Scotland, and thence to France. After the King's death, he ventured to London; and, being at a ball in King Edward's court, of prepossessing manners and most handsome person, he captivated and married the daughter of Sir Anthony Browne, and was shortly after received into King Edward's favour, who restored him his lordships of Maynooth, Portlester, Moylaugh, Rathangan, Kilkea, &c. &c. He returned to Ireland in 1554, and was received with much congratulation; from thence until his death in November 1585, he evinced his gratitude to the crown, by rendering the most essential services to the English interest in Ireland.

Thomas, the fifteenth Earl, succeeded his nephew, who died at Maynooth in 1620, in his eighth year. Of this Earl nothing referring to the county of Kildare

Kildare is mentioned, but, if the reader will feel the beauties of the following, he will forgive its introduction.

In the church of Walton upon Thames is the following monument to the memory of Thomas Fitz-Gerald and Frances his wife:

Stop passenger, and read in ill framed lines
The life and death of two well suited myndes:
To poor they gave, of rich they did not borrow,
To all they lent, where want expressed sorrow;
To foe a friend, to friend their faith approved,
Of foe, of friend, of both they were beloved.
Their earth was heaven, where blessed angels sing,
Their church was Christ, whose death sure life doth bring;
In fine, so liv'd, so lov'd, so dy'd, and rest
As friends, as doves, as saints, and so were blest.
Move on this way, thus live, thus dye, which done,
Two lives thou gain'st, when others have but one.

Robert Fitz-Gerald, uncle to John the eighteenth Earl, being very active in the restoration, was joined with his nephew in the government of the county of Kildare; he was given a troop of horse, and many lucrative employments; he resided at Grangemellon, two miles south-east of Athy, in much honour and esteem. When King James came to the crown, by

the advice of Tyrconnel he was stripped of all his employments and estates of the value of 3,000l. a year, and himself imprisoned in Newgate. At the defeat of the Irish army at the Boyne, he made his escape to Dublin, where, at the hazard of his life, he protected the plunder taken from the Protestants, and the goods of the Roman catholics from destruction, and in the end preserved the city. When King William arrived, he presented his Majesty with the keys of the city and castle, who was pleased to return them with this expression, "*Sir,* "*they are in very good hands; you deserve them well,* "*and may keep them.*"

Robert, the nineteenth Earl, by royal charter, 22d October, 1733, was constituted a member of the incorporated society for promoting English protestant schools in Ireland. He subscribed 500l. to the school at Castledermot; he died at Carton 20th February 1743, bequeathing to the charter school at Castledermot 500l.; for building a charter school at Maynooth, and another at Strangford, 500l. each; to the charity children of St. Anne's parish, Dublin, 500l.; to the poor of the parishes of Maynooth, Castledermot, Athy, and Kildare, 50l. each; and 200l. to rebuild the church of Rathangan. He was interred in the family vault in Christ-church: a monument was erected there, with the following inscription.

TO

TO THE MEMORY

OF

ROBERT, EARL OF KILDARE;

The nineteenth of that title in succession,
And in rank the first Earl of Ireland.
He married the Lady Maria O'Brien,
Eldest daughter of William, Earl of Inchiquin,
By whom he had issue four sons and eight daughters;
Of which number
Only James, the present Earl, and the Lady Margretta
Survived him.
Together with the titles, he inherited the virtues
Of his noble ancestors,
And adorned every station he possessed.
Truth, honour, and justice
Directed the whole course of his life.
The daily devotions of his family,
And the public worship in the church,
Were his regular attendance;
These he cherished and recommended.
Though possessed of a great estate,
He managed it with particular prudence and economy,
In order to give a freer course to his many and great charities.
He was a distinguished lover of his country,
Without any affectation of popularity;

And was beloved of all, not because he sought it,
But because he deserved it.
He was
A most tender and affectionate husband,
An indulgent and prudent father,
A sincere and steady friend.
His disconsolate relict,
In testimony of her gratitude and affection,
And the better to recommend to his descendants
The imitation of his excellent example,
Caused this monument to be erected.
He died the 20th day of February,
A. D. 1743, in the 69th year of his age.

For many centuries the Danes held the people of Ireland in the most slavish subjection; every householder was obliged to subsist a Danish soldier, and to pay an annual tax of one ounce of pure silver. According to every ancient record of Ireland, the sword-handles, bridles, and even the stirrups were made of gold; the conclusion may be fairly drawn, that Ireland then abounded in numberless mines of both gold and silver. In Peru and Mexico the natives have made use of every exertion to conceal the situation of their mines from their cruel task-masters; such must have been the conduct of the original native Irish, and, in the course of centuries, all traditional knowledge of the situation of the

mine

mines of Ireland has been sunk in darkness and obscurity.

In the county of Wicklow, different companies have been formed for exploring the tracts most likely to produce mines; their endeavours have been every where crowned with very great success. In the year of the world, 3041, nine hundred and sixty-two years before the birth of Christ, when Tighermas was monarch of Ireland, a gold mine was first discovered near the river Liffey; no trace of it is now visible. The enlightened Dublin Society, with their greatly informed Vice-president, Mr. Foster, would do much national benefit by encouraging and protecting attempts at opening the mines of Ireland. On the estate of Mr. Glover, near William's-town gate, a silver mine was worked about forty years since by a Mr. Duggan; want of capital or of judgment made him fail in his attempt; the smelting-houses and pits still remain neglected. Duggan smelted a quantity of the ore, from which he obtained some silver, and sent the lead to Holland; when it was there smelted, a sufficient quantity of silver was obtained to send back the second smelted lead, and with it to make further purchases from Duggan. In all the neighbourhood, and on Mr. Redford's estate near Athy, ochre is abundant. I shall close this subject with an extract from a description of the copper mines of the county of Kildare,

Kildare, by the ingenious and learned Doctor Beauford.

Next to the animal and vegetable productions of a country, the mines and quarries undoubtedly merit the attention of the inhabitants. Ireland, in this respect, may be considered a terra incognita; for though some mineral productions have been discovered, and even mines wrought to advantage, they are by no means adequate to those vast magazines of mineral, fossil, lithological productions, which in various parts seem to be contained within the bowels of this island. For, situated on an immense bed of granite, rising out of the bosom of the ocean, interspersed every where with calcareous, ferruginous, and argillaceous matter, Ireland bids fair, in process of time, to attain an equal, if not superior rank, among the European countries in respect to her subterranean riches.

Without taking notice of the several mines already discovered, or of those places which indicate others, I shall at present confine my observations to those lately opened in the red hills in the county of Kildare. These hills, for they cannot be called mountains, are situated between two and four miles north-west of Kildare, in a direction nearly north and south, consisting of three elevations; the two northern of which are denominated Dun-Murach, or Dun-Murry, that is, the red hills; the

the southern, Dun Almbaein, or the hill of Allen, separated from Dun-Murry by a valley about a mile in breadth. Dun-Murry forms a kind of headland towards the north, is fertile in corn and pasturage, and composed of limestone rock; the loose stones on its surface frequently appear as if calcined in the fire, of a red purple colour, and sometimes tinctured with sulphur; whence those hills have from remote periods obtained the name of Murach, or reddish purple. Though such stones are certain indications of copper being contained in the internal parts, no search or discovery was made respecting the fact, until about the year 1786, when, some of the neighbouring farmers opening a gravel pit on the north declivity of Dun-Murry, near the base, something like metallic ore was discovered, which upon examination was found to be rich copper; this induced the proprietor of the soil, his Grace the Duke of Leinster, in conjunction with James Spencer, Esq. Richard Evans, Esq. and some other gentlemen, to establish a small fund, in order to examine the hill: miners were therefore employed, and shafts sunk in different elevations of declivity in the solid rock, of the depths of from four to fifteen fathom. During these operations quantities of yellow sulphureous copper ore were found, near forty per cent. purity, mixed with sulphur and calcar; thus encouraged, levels were opened, whence proceeds a strong vitriolic

vitriolic water, which indicates the mine to be copious and rich; even the water, if not sufficiently impregnated to incrustate iron, might certainly be converted into vitriol. The principal bed of the mine seems to lie deep within the hill, and even to dip under the valley, which separates Dun-Murry from the hill of Allen. From the present state of the work it is impossible to ascertain the product, but from every appearance, if wrought with spirit, it must amount to some thousands annually. A branch of the Grand Canal running through the middle of the valley between the hills, even, if found necessary, the ore might be smelted on the spot by charred turf, the bog of Allen lying on the western confines of the hills, and by means of the canal the turf could be brought very near the mines. The stone contained in the rocks is calcareous, but in many places of a very fine grain, and would be both durable and ornamental in building. By means of water carriage quarries could be wrought to advantage, and their produce sold reasonable in Dublin and other adjacent parts of the country. There is also found near the base of the hill an alkaline argillaceous earth, of a white or light grey colour, which is found to have many qualities of fuller's earth; and in a number of cases it might supply its place, though probably it would not answer so well in fulling cloth, not containing enough of alkali; it could, however, not fail

fail of being extremely useful as a compost in forming manures. In the veins of the rocks and matrix of the ore are found quantities of fine yellow ochre, which, when washed and purified, is proper for painting, and little inferior to English ochre. Great quantities of coak are also found, with much calcareous spar, also a kind of fossil, in which there is some silver, but not enough to be of any value. Opposite to Dun-Murry on the north, on the other side of the valley, about a mile distant, stands the conical hill of Allen, composed of calcareous rocks; this, with the isle of Allen, is the property of Sir Fenton Aylmer Bart.; it has not yet been examined internally, but from the surface there is every appearance of copper; the loose stones, and even the points of rocks in the external parts, appear as if vitrified by fire, and numbers are richly impregnated with blue and green vitriol, strong indications that the mines are not only rich, but of no great depths. Among the rocks is also found a stone, which from its texture would be proper for millstones. It has been since proved to be of the most valuable kind. Sir Fenton Aylmer holds out every encouragement for its being extensively worked. *Some spirited adventurer may make a fortune.*

FAIRS.

Tully, January 1st, and July 27th.

Castledermot, February 24th, April 7th, May 25th, August 4th, and December 19th.

Athy, March 17th, April 25th, June 9th, July 25th, October 10th, and December 11th.

Kilcullen-bridge, February 2d, March 25th, September 8th, 29th, and December 8th.

Naas, March 17th, May 7th, 18th, and November 23d.

Kilcock, March 25th, May 11th, August 11th, and September 29th.

Red Lion, March 25th, and September 8th.

Monasterevan, March 28th, May 19th, July 31st, and December 7th.

Narraghmore, March 28th.

Timolin, March 30th, and June 29th.

Johnstown-bridge, March 31st, May 29th, October 13th, and December 21st.

Ballymany, April 6th, August 21st, and November 2d.

Clane, April 28th, July 25th, and October 15th.

Kildroughall, April 28th, September 8th, and November 7th.

Calverstown, May 1st, and September 21st.

Kildangan,

Kildangan, May 1st, and September 29th.

Kilteel, May 1st, June 24th, September 29th, and November 2d.

Moon, May 1st, June 19th, August 13th, and October 28th.

Churchland, May 2d.

Hortland, May 2d, and December 9th.

Leixlip, May 4th, and October 9th.

Maynooth, May 4th, September 19th, and October 9th.

New-bridge, May 4th, and August 15th.

Ballyownan, May 5th.

Kilgowan, May 8th, and July 20th.

Rathangan, May 19th.

Kilbanneran, May 25th, August 26th, and November 12th.

Kilmage, May 25th, June 29th, and September 25th.

Castlecarberry, May 26th.

Kilcullen, June 22d, and October 2d.

Rathbride, July 6th.

Quin, July 7th, August 15th, and December 30th.

Frenchfurze, July 27th.

Ballytore, August 15th, and November 30th.

Russel's wood, August 26th.

CALCULATION
OF
EXTENT OF AGRICULTURE
IN THE
COUNTY OF KILDARE.

Names of Baronies.		Acres.	Barls. per.	Total of Barrels	Money for each.	Total in money.
					£.	£.
Carberry,	Winter	833	8	6664	9996	15427
one-eighth,	Spring	833	14	10862	5431	
Clane,	Winter	600	8	4800	7200	11400
one-eighth,	Spring	600	14	8400	4200	
Ikeathy,	Winter	1200	8	9600	14400	22800
one-fourth,	Spring	1200	14	16800	8400	
Connell,	Winter	933	8	7464	11196	17727
one-fifth,	Spring	933	14	13062	6531	
Kilcullen,	Winter	350	5	1750	2625	4375
one-fifth,	Spring	350	10	3500	1750	
Kilkea,	Winter	2333	5	11666	17499	29164
one-fourth,	Spring	2333	10	23330	11665	
East Offaley,	Winter	933	5	4665	6997	11662
one-fifth,	Spring	933	10	9330	4665	
West Offaley,	Winter	700	7	4900	7350	12250
one-eighth,	Spring	700	14	9800	4900	
East Narragh,	Winter	722	5	3610	5415	9025
one-sixth,	Spring	722	10	7220	3610	
West Narragh,	Winter	916	6	5496	8244	13824
one-fourth,	Spring	916	10	9160	4580	
North Naas,	Winter	1066	7	7462	11193	18655
one-fifth,	Spring	1066	14	14924	7462	
South Naas,	Winter	1222	6	7332	10998	18330
one-third,	Spring	1222	12	14664	7332	
North Salt,	Winter	866	8	6928	10782	16844
one-fifth,	Spring	866	14	12124	6062	
South Salt,	Winter	564	8	4512	6768	7896
one-sixth,	Spring	564	14	2256	1128	

Total arable and pasture, 201,220 acres. Total in cash, 209,379*l.* a trifle more than twenty shillings per acre, about the average value of land in the county.

	Athy	Kildare	Leixlip	Maynooth	Monasterevan	Naas	Portarlington	Prosperous	Rathcool	Rathangan	Stradbally	Timolin
Athy	1½	11	29	28	9	17	14½	21	24	16	7	7½
Ballitore	7½	11	25½	24	13	13	18	20	21	16	13	1½
Ballymore	15	10½	17½	16	16	5	21	12	11	16	22	10½
Baltinglass	4	18	29	28	20	17	25	24	23	23½	17½	5½
Blessington	9	14	15½	17	19	6	25	13	8	18	26	14
Carlow	8	20	36	34½	19	23½	14½	30½	31	25	16	9½
Castlecarbe	8	14	21	14	19	14½	17	9½	21	13	32	26
Castldermo	3	16	30½	29	16	18	22	25	26	21	14	4
Celbridge	15	18	3	4	23½	9	29	9	6	19	32½	23
Clane	10	13	9	7	18	4	24	3	9	13	28	18
Clonard	23	19	18	14½	23½	20	20	15	24½	16	30	31½
Clonbullog	14	9	24	21	11	17	8	14	25	4	10	21
Cloncurry	19	19	11	7	24	14	24	12	20	20	30	28
Dublin	21	25	8	11½	30	15½	35½	18½	8	28½	39	29½
Donadea	14	14	11½	7½	19	8½	25	7	13	14	32	22½
Dunlavin	5	10	22	26	16	10½	21	16½	16	20	18	5½
Edenderry	20	15	21	17½	17	17	14	12½	24	10	24	27
Hortland	16	16	11	7½	21	10½	27	9	15	16	33½	24½
Johnstown	19½	19	13	9	25	14	22	13	19	18	32	28
Kilcock	17	18½	6½	3	24	11½	28	11½	17	18½	36	25½
Kilcullen		6	18	16½	11½	5½	17	12½	13½	10	18	8½
Kildare			21½	19½	5	9	11	10½	17	5	18	12
Leixlip				3½	27	12	32½	12	9	22	35½	26
Maynooth					25	11	30½	9½	10	19½	34	25
Monastere						14½	3½	16	22	7½	7	14
Naas							18	7	8	13	23	14
Portarling								21½	28	8½	8	20
Prosperou									11	10½	28	21
Rathcool										21	31	22
Rathanga											13	17½
Stradbally												14
Timolin												

Breed of cattle—how far capable of further improvement.
Markets or Fairs for them,
General prices,
Modes of feeding—how far housed in winter,
Natural grasses,
Artificial grasses,
Mode of hay-making,
Dairies—their produce,
Prices of hides, tallow, wool, and quantity sold.

FARMS.

Their size,
Farm houses and offices,
Mode of repairing them, whether by landlord or tenant,
Nature of tenures,
General state of leases,
———— of particular clauses therein,
Taxes or Cesses paid by tenants,
Proportion of working horses or bullocks to the size of farms,
General size of fields, or enclosures,
Nature of fences,
Mode of hedge-rows, and keeping hedges,
Mode of draining,
Nature of manures.

GENERAL SUBJECTS.

Population,
Number and size of villages and towns,

Habitation,

STATISTICAL SURVEY

OF THE

COUNTY OF KILDARE.

PART I.

CHAPTER I.

GEOGRAPHICAL STATE AND CIRCUMSTANCES.

SECT. 1. *Situation and Extent.*

KILDARE, a midland county of Leinster, is bounded on the north by Meath, on the east by Dublin and Wicklow, on the south by Carlow, and on the west by the King's and Queen's counties; containing 201,220 acres of arable, pasture, and meadow ground, and 41,025 acres of bog; total, 242,245 acres plantation measure, contained in fourteen baronies and half baronies. It is about thirty-two miles long, and twenty-one broad, mostly

flat, of fine arable soil, much exhausted, as, from its vicinity to Dublin, it has been for centuries the county, from which the capital has principally drawn its supplies of grain. The population is immense, particularly in the vicinity of turbaries, where the lower orders collect to enjoy the blessing of cheap fuel, with which this county so abounds. Grand jury assessments are made on the baronies according to the number of ploughlands in each, containing (as supposed) from one hundred and eighty to two hundred acres in a ploughland; and these are again subdivided on the different denominations of land, according to ancient return, and immemorial rate and custom, to explain which more fully tables are annexed; the relative situation of the baronies is best explained by the map.

Sect. 2. *Climate.*

In a county, where one fifth is bog, much water must lie on the surface; this of course attracts the rain from every passing cloud. It may be remarked in the summer season that, where a cloud passes over an extensive bog or river, it is arrested and drawn down; this causes the county to be subject to more moisture than any in Ireland, and this evil must continue until the kingdom be relieved by a general

general drainage act, which shall compel slothful occupiers and proprietors to come forward, and contribute to such extensive drainings on a great public scale, as the legislature may in its wisdom direct, according to the benefit to be derived by each estate or property, through which such drains shall be pointed out. It is notorious that, when the Grand Canal was opened above Rathangan, from the top of the old castle of Ballyteague, twenty feet high, Rathangan church or steeple were not discernible; now and immediately after the opening, one can be seen from the base of the other, at the distance of two miles; so that here a subsiding of twenty feet was obtained, and, if locks had not been erected for the navigable purposes, no doubt but the canal would have tapped and drained all the bogs, through which it passed. From the perpetual clouds, which were formerly pendent over the isle, almost covered with bog and wood, it acquired amongst the ancients the name of the Island of mists; it is for our legislators to endeavour to dispel them, by which they would purge this climate of its impurities, render it much more wholesome, and better fitted to agricultural purposes; and, in this county alone, upwards of forty thousand acres may be made to enliven our scenes, whilst they contributed millions of tons of potatoes to promote the comforts of the poor.

CHAPTER II.

AGRICULTURE.

SECT. 1. *Mode of Culture.*

EXCEPT in a few instances where some have ventured out of the beaten track, the agriculture is the same as for the last century; viz. fallow, wheat, oats—fallow, wheat, oats, until the exhausted soil by the constant fallowing, followed by two exhausting crops, is heart-broken with its ill conducting occupier; it is then mostly left, often in high ridges, to a coat of couch-grass and time to recruit its exhausted strength. The extent of the tillage in each barony I have endeavoured to calculate, and have set down in annexed baronial tables. Potatoes are universally cultivated, mostly hitherto with the spade, which is now giving place to the plough and drill; but so averse are the lower classes of Irish farmers to any thing out of the track of their grandfathers, that I was for twenty years, before I could prevail on one of my neighbours to follow the example of my drilled culture; but so soon as one ventured and succeeded, he was followed by numbers, and drilled potatoe culture is advancing with rapid

rapid strides. Of seed wheat, twenty stones; of seed oats, twenty-eight stones; and of barley, sixteen stones are universally sowed.

Sect. 2. *Use of Oxen.*

No man cultivates to any extent without oxen for the principal drudgery of ploughing. Horses, by the Kildare farmers, are used for the carting business about the farm, the bringing corn to markets, the collection of manures, &c. &c. Even in their cars, the little poor man's bullock is constantly seen conveying sixty stones of wheat six or eight miles to market; they are always drawn by collars of curled hair or straw. Great numbers of mules are in use; they are much preferred for their easy keep, durability, smartness of foot, and length of life. Some of the most intelligent farmers give their deep summer's ploughing with four bullocks, set to work at five in the morning, and working until ten; the ploughman and driver then go to rest until two, when a fresh yoke works until seven; in this way the cattle are always fresh, and will turn a plantation acre in the day. The first ploughing of either lay or stubble is given in October and November, as thin and light as possible; only one half of the soil, intended to be

be cultivated the ensuing summer, receives any frost preparation, and the labour of gaining the necessary depth in the drought of summer becomes a task of the severest kind; but, if the first ploughing was given of a due depth in November, the soil would all be benefited by the frost preparation, and the subsequent working rendered light and easy. To get deep into the soil, and to stir it all even, is the object of every ploughman. In the manner fallows are turned (generally in beds of seven feet), the center, two feet of the bed, is scarcely stirred, and the whole earth is forced up in a heap against high banks. I have long been in the habit of giving my deepest ploughing, by going round the outside edges of the field; after ploughing two bouts, the plough throws the second sod or earth over the first, thereby clearing and deepening a furrow for the third bout to fall into; this, by holding down the right hand, will completely turn over the furrow slice or sod, as it is here called; and, by persevering in keeping up the left hand, and thereby preserving the furrow open, the whole can be turned over, at least twelve inches deep; in the angles of the field, a labourer will in a few hours dig up what has been uncut by the plough in going round.

The natural soil of the county is a strong clay of twelve inches depth, very tenacious of moisture, and will not bear stirring in wet weather. Of the quality

lity there is not much variation, save that in some of the uncultivated parts the soil is mellower, deeper, and richer, and in a large district west of Athy, called Churchtown, it is all a brick clay; this has been under tillage for centuries. No oats will grow in it; the wretched farming, alternate wheat and fallow, is invariable; *no vegetable, no red clover*, which grows here in the greatest luxuriance, and lasts good for three years; if it was introduced, it would, with the assistance of sheep stock, soon make Churchtown the best wheat country in Ireland; but the occupiers have worked themselves and their lands into poverty, and having no length of tenure, and well knowing, that the more an Irish tenant improves at or near the close of his term, the more certain he is to be turned out by captain Bidbest, he trudges on in most unprofitable inactivity. How different the conduct of landlords in England and Ireland!

Sect. 3. *Nature and Use of Implements of Husbandry.*

The old Irish long-beamed unwieldy plough is in common use, the weight sufficient to load two of the four animals, who are obliged to lug it. Some few spirited gentlemen have introduced the Scotch

Scotch and Leicester ploughs; they are gaining ground. Mr. Christie has introduced the Scotch plough with two horses and no driver at his farm at Irishtown, of which more hereafter; he has also introduced the Scotch cart; several are making. It may be necessary to stir the strong clay soils of the county once a year to a good depth, and that a large plough should then be used; but the farmers do all their work, whether light or heavy, with the same unwieldy plough, and even sow their corn with it. Their harrows consist of a large brake of great size and weight, and a small harrow to be worked by two. The low log-wheeled car is in common use with the lower order of farmers, but they all take pride in being able to make up a cart. I have a curricle cart, which is drawn by two bullocks or heifers; they step fast with thirty hundred weight.

Sect. 4. *Markets for Grain.*

Except the consumption of the county, most of the grain is bought up by commission and by flour mills, and sent by water carriage to Dublin. The principal markets are at Athy and Kilcullen.

SECT. 5. *Use of Green Food in Winter.*

SOME few gentlemen, whose example merits every attention, have cultivated vegetables for the above purpose; of their value all seem sensible. Most farmers make use of the outside leaves in their cabbage gardens, and boiled potatoes for their milch cows in winter. The cottagers in the neighbourhood of the Curragh have an excellent practice, by which they grow cabbages to a large size in the poorest soil; they collect sheep-dung on the Curragh in a tub; this they fill with water, stirring it for some days until all is dissolved into a thick puddle; in this they steep the roots of the cabbage plants for some hours; a quantity of the mulshing sticks to the roots in planting, and it insures a full crop. I can vouch that, if this be practised with other rich manures, cauliflowers, cabbages, &c. &c. &c. may be planted in the driest seasons without losing a leaf.

CHAPTER III.

PASTURE.

SECT. 1. *Nature of it.*

WHERE the plough has not encroached, there are very rich fattening grounds throughout the county, particularly in the baronies of Carberry, Clane, and North and South Salt; where the ground has been much exhausted by the plough, the pasture is poor and light. A tillage farmer never thinks of turning out to grass, until his land is not able to bear more corn. About forty years since, the calcareous gravel, every where to be found under the surface, became of general use; its effects were violent and extraordinary; it produced for eight, ten, or twelve years the most luxuriant crops, by which the land became so exhausted, as to be incapable of further cropping, and was left to time for improvement; without other assistants, time and sheep-stock would not restore such exhausted land in fifty years; but, if such gravelled land had been put at first under a judicious course of alternate green and white crops, it would bear tillage for ever.

SECT.

Sect. 2. *Breed of Cattle, &c.*

In the course of this work the reader will find the fullest account, in the reporter's power, of the different kinds, and their means of improvement; the fairs of the county are stated in a separate table. All the horses, cows, and bullocks used in winter are housed and well fed with hay.

Sect. 3. *Grasses.*

The grasses in the meadows and feeding pastures of the county are of the most valuable kinds; when submitting tillage land to grass, the farmers chiefly sow the seeds from the natural meadows, which are filled with red and white clover, trefoil, ray-grass, white hayseed, foxtail meadow-fescue, ribworth, &c. &c.; in the bottom meadows, particularly those subject to flood, Timothy grass is the principal herbage. Red clover is sowed by the farmers in the north end of the county for fattening lambs for early market.

Sect. 4. *Mode of Hay-making.*

In general, a forker follows the scythe, and spreads the sward; after one, or sometimes two days, it is turned, and every pains taken by exposure, to deprive it of its sap; when it is sufficiently bleached, it is put into rows, which are again and again broken out until it is completely parched, and then, after a few hours more exposure, the farmer ventures it into tramped cocks of about one and a half ton. A direct opposite conduct, and an endeavour to preserve the nutritious juices, should be the study of the hay-maker; for which purpose, if grass be cut moderately dry, it should be instantly rolled up into cocks, with a hole in the centre like a muff; through this the air passes freely, and any moisture is carried off; the second day, turn every cock in the centre row of three rows, and lay on it, turned upwards, the two cocks from the outside rows; on the third day, reverse the situation of the three cocks, placing any raked hay at bottom; on the fourth day, the whole may be shook over and placed in larger cocks. The practice of cock-making is to shake all on the top until finished; by this it is left so loose and open, that it readily receives every shower; the heading of the cock should be shaken

shaken evenly into a small cock by the side of the one it is intended to cover, and then, with one hand on the top of the small cock, and another at bottom, turn it gently upside down on the top of the larger cock; by this trifling attention, the small cock becomes a coat of thatch to the other, which no rain will penetrate. By such careful management, the nourishing juices are preserved, the risque of climate is guarded against, and by increasing and doubling the cocks, until they arrive at the weight of four hundred, they may be left in such state, until it is the farmer's convenience to put them into large cocks, or haggard rick. In these four hundred cocks they will be also well situated to set out the tithe, should the farmer be cursed with a litigious tithe-gatherer.

Sect. 5. *Dairies, their produce.*

There is none in this county of any extent, except in the parts convenient to the Dublin markets, where they have been kept for vealing calves. Mr. Baker, of Ardrass, has kept from eighty to ninety, solely for that purpose, for many years; each cow is calculated in the season to veal two and a half. This very profitable branch has been much injured since the Union; the consumers have removed to

to another soil; the calf, that used to bring six guineas, will not now sell for four.

SECT. 6. *Prices of hides, tallow, wool, and quantity sold.*

HIDES are usually sold from four pence to six pence per lb.; tallow, from six to eight shillings per stone; wool, from sixteen to nineteen shillings per stone.

It is impossible to ascertain the quantity of hides or tallow sold. The tanning trade has had a rapid decline. Sheep having for many years given place to the plough, there are but three or four extensive flocks in the county; the quantity of wool grown may average from six to eight thousand stones.

CHAPTER IV.

FARMS.

SECT. 1. *Their size, Farm-houses, and repairs.*

THE farm-houses in general consist of a long thatched building of one story, containing a large kitchen and fire-place in the centre, and lodging rooms at either end;

end; the front-door looks to the barns and stables at the right, behind which is the haggard, and on the left side are placed the cow and bullock houses; in the centre of the front yard are the dunghills; the pig-troughs near to the front door. The tenant constantly executes all buildings and repairs, the landlord or his agent never taking any trouble about the comforts of the tenant. Farms generally rise from ten acres to one or two hundred; any thing less than fifty cannot give employment to a plough. Farms are frequently taken in partnership, where four or six can furnish a horse each; a more injurious practice could not have crept into use, as it is but seldom all the parties can agree on one plan, or can have their horses ready on the same day; of course the work lies behind, the fallow is overrun with weeds, and every thing goes to ruin. The custom of leaving a back half year in the tenant's hands is an encouragement to men of no capital, to become landholders; an Irish farmer, worth fifty pounds, will take five hundred acres. Where lands are advertised to be let to the best bidder, if the man of fifty pounds be the highest, he gets the five hundred acres; he ploughs part for oats, plants potatoes in a large part, puts up every thing that will mow, takes in grazing cattle, &c. &c. and, at the end of twelve or fourteen months, comes to pay one half year's rent out of one entire year's product

of

of the farm, the surplus increasing his capital of fifty pounds; if corn continues to sell at a high price, he struggles on; two or three years of falling price shew his want of capital; he takes *French* leave, and the landlord has another opportunity of setting his much injured land to *the best and fairest bidder*. All this would be avoided by obliging the tenant, in the first instance, to secure the payment of the rent half yearly, as it became due.

Sect. 2. *Nature of Tenures, State of Leases, &c.*

Leases were heretofore granted for thirty-one years; they are now mostly granted for lives, except in some, where clauses are introduced against alienation, against breaking but a certain quantity of land, and against making a peel or birch fallow, viz. ploughing up stubble after harvest, and sowing with a winter crop. Leases contain only the usual clauses between landlord and tenant. All parish taxes and county cesses are paid by the tenants; the coming-in tenant paying all county charges ordered to be levied at the preceding assizes. Why? He receives all the benefit and advantage of roads, bridges, &c. &c. &c.

SECT. 3. *Proportion of Working Horses and Bullocks to the size of Farms.*

To a farm of one hundred acres, half arable, and half meadow and pasture, one plough of four bullocks, and one of four horses is in general use; when both are called out, the practice is to yoke two bullocks and two horses to each; a more destructive practice could not be; they do not step together, and they break the spirit and step of each other. Much diversity of opinion is about the preference to be given to horses or oxen in agriculture; the reporter supposes, that the keep through the year of four oxen is equal to the keep of two horses worked in a plough without other assistance; the following table is the best calculation in his power:

May 1st.	£.	s.	d.	£.	s.	d.
Four three year old bullocks at 7*l.* 10*s.* per - - -	30	0	0			
Worked for two years, and sold at a profit of - - - -				12	0	0
Four other three year old worked third and fourth years, profit				12	0	0
Same for fifth and sixth year -				12	0	0
Same for seventh and eighth year				12	0	0
Same for ninth and tenth year -				12	0	0
				60	0	0
Two horses bought in at 15*l.* per	30	0	0			
After ten years not worth - -	6	0	0			
Loss - -				24	0	0
Gain in favour of bullocks -				36	0	0

If a bullock by any accident should get lame or unfit for work, he may be fattened for the butcher; but a lame horse is worth no more than his hide.

It has of late become much the fashion to cry up horses for the plough; I saw at the ploughing match some time since at Mr. Shaw's two beasts of the Right Hon. John Foster's, that did their work without a driver as expeditiously, and as well as the best pair of horses.

SECT. 4. *General size of Fields—Nature of Fences —Mode of Hedge-rows and keeping Hedges.*

FIELDS are of various sizes, from the peasant's potatoe garden to the large sheep-walks of twenty thirty, forty or fifty acres; but in the tillage parts the practice runs into long small inclosures, producing great waste of land, and expence of keeping up; at the foot of this section is a plate to shew the comparative expence. In all uplands, good quick-set hedges form the divisions, but in many cases they are greatly neglected; the most usual kind of fence is a bank raised from a dyke, six feet wide, and five deep; in the centre of the face of the bank a row of thorn quicks is placed horizontally, four in every foot; with these, elm and ash seedlings, cut short, are placed at indeterminate distances: when the

the bank is finished, it is topped with dead bushes to protect the quicks, &c. There are two things in this practice to be corrected; first, when the bank is high enough to receive the thorn quicks, they should be cut short and dibbled in, so as to stand in a perpendicular situation; the rain will then help the roots, and shoots will grow upwards; thorn quicks should not be placed nearer than one foot, the intervals with one slip or cutting of evergreen or other privet; at every three feet a seeding barberry. The thorns will then have room, and grow upright, whilst the bottom is covered with perpetual verdure; if some attention be paid to the pruning of the thorns for three or four years, and confining them to a single stem, it will be well rewarded, as they will, in that case, have made an impenetrable staking not passable to man or beast. It is a general practice, where hedges are to be kept shorn, to cut them over at three feet high, and so clip the shoots; this produces a bushy top, and, in a little time, an open bottom. Every cutting of an old hedge should be obliquely, and close to the bottom; if done with a saw, an adze should follow to smooth the roughness of the cut, particularly round the edges; this will encourage copse to grow, which may then be formed with the sheers into whatever shape the owner pleases. Many cut their old hedges at a foot or eighteen inches from the bottom half through, then

lay them, and cover the trunchion and tops with a heavy scouring from the dyke, so completely as to exclude all possibility of vegetation in the mutilated smothered hedge, producing the natural consequence, languishing and death. When a hedge wants to be renewed, and its vigour restored, the better way is, first, to dig away the earth at back, eighteen inches broad, down to the bottom of the hedge; such parts, as are to be layed, should be bared from all branches, and, when half cut, layed obliquely backwards, so as that the shoots of one shall not interfere with the other; they are to be pegged down, but no covering of clay, sods, or scouring should be admitted; by this a young hedge, eighteen inches broad, will be obtained; the lopping of the old hedge will raise a staked one to protect the young shoots. Every farmer should have a nursery for thorn and crab quicks, and for the trees to be planted; nursery gardeners grow them so thick, they are in general not worth planting; they have promising heads without roots. To raise thorns, haws should be gathered when dry and ripe; it is usual to put them into dry pits for fifteen months, then taken out, and spread in beds lightly covered with earth; they will be up in April. For many years I have practised the raising of thorns by cutting off half the roots; these divided into lengths of one inch, and covered with one inch of earth, will produce

produce quicks in six months, equal to those from the haws.

An excellent fence, particularly in low situations, is to divide the stuff, raised in making the dyke, equally on both sides, by which two small banks will be made, each bearing quicks, and the top of each covered with grass sod; if carefully carried up, it will be twelve feet from top to top; nothing will pass it; furze seed, sown in drill at the back of the sods, will give immediate great shelter. Here you have the advantage of a double quickset out of one gripe, without occupying more land than a single gripe and its large bank, which in low lands is sure to tumble from its own weight.

The first sod in forming a ditch is called the cape-sod; this is invariably turned with grass side down, and soon rots itself and the bank under it: any grass sod, used in forming a ditch, should be placed with the grass side uppermost (not in front;) this is the better way, to make sod faces to all sod embankments; the edges will instantly grow one into the other, and not be subject to rot and tumble.

Sect. 5. *Mode of Draining,*

As practised by the most intelligent, will be found detailed in my Essay to the Agricultural Board.

Sect.

Sect. 6. *Nature of Manures.*

That which has been in general use, is the gravel called by the farmers corn-gravel, from the immense crops it produces for many years; great pains are taken by pilfering from the highways, by digging the backs of ditches, exploring dykes, &c. &c. to collect manure, generally for the potatoe crop. Of late years, in the vicinity of bogs, the upper red parts are drawn into yards, and mixed with the gravel; this produces fermentation even better than quicklime, and with this they mix their farm-yard dung, and all is used for their potatoe crop. On this compost great crops are raised, and it is found very beneficial in subsequent corn or meadow. Lime is easily acquired, but very little used; it has been used on exhausted soils, and has invariably failed; it must have a maiden unexhausted substance to operate on; by being incorporated with such, it may be used with success in every situation.

CHAPTER

CHAPTER V.

GENERAL SUBJECTS.

Population;—Number and size of villages and towns; Habitation, fuel, food, and cloathing of the lower ranks;—Price of labour, wages, and provisions.

An wholesome climate, and the strong nutritive quality of that blessed root, the potatoe, the almost constant food of the Irish peasant, induce both sexes early to become the heads of families. An unmarried man at twenty-five, or a woman at twenty, is rarely to be met in the country parts. Pat tells his honest tale to Judy, as they return home from the dance; she is not obdurate. A situation is pitched on for a mud cabin, which is speedily erected with the assistance of the neighbours, who chearfully contribute to the comforts of the new married couple. A kitchen and bed-room bounds all their wishes: a few ridges of potatoes secure a prospect of food: Pat goes to labour, whilst Judy cooks, and attends him with his frugal meal. Pat's next effort is to get a house and garden of one acre, from some opulent freeholder: a cow is advanced him: he labours on for his employer with chearfulness and

and content, and in a short time sees a growing family springing up: he contemplates his children with double pleasure; the little boy will soon be able to drive the master's plough, whilst the girl assists the mother in spinning and cooking their potatoes, stirabout, &c.; for by this time he grows oats in his garden, the seed, and the cattle to till, being furnished by the master. The first and greatest grievance he experiences is, when a tithe-jobber, proctor, &c. &c. takes away the tenth of his labour; his watchings, his industry, and his seed all expended in growing what the tenth of is now rigidly enforced under severe threats of law. Pat, Judy, and the little ones, see their tenth mouthful ravished from them. Of this alone he complains: he feels no slavish subjection, but is grateful for the cherishing and supporting hand of his employers, who are at all times ready to assist at every pressing call. Other labourers are not so fortunate; they live mostly in towns and villages, and work by the day or week for every chance employer, at the general rate of a British shilling per day, except in harvest, when their wages rise to two shillings and eight pence halfpenny.

Oatmeal, potatoes, eggs, herrings, with some milk and butter, constitute the food of the lower orders; their fuel is turf: their cloathing, home-made frize coat, cotton waistcoats, and corderoy breeches, yarn stockings

stockings and brogues for every day: for the unmarried, white stockings and shoes for Sundays and holy days. Even in the dog-days, Pat sweats under a heavy frize coat, and if he had three coats, &c. he would mount them all.

The appearance of the women is much bettered; within these twenty years they were ragged and barefoot; even on Sunday, if a girl appeared so well dressed as to have shoes and white stockings, she was pointed at; now no country girl is seen without them. Potatoes, at the average of three pence per stone; oats, at nine shillings a barrel, fourteen stones to the barrel.

SECT. 2. *State of Tithe; its general amount on each article; what articles are exempt, and what charged by modus.*

THIS is a subject, on which it is impossible to speak plain facts, without calling down a host of open-mouthed enemies: be it so. If by probing gently foul sores the patient is made to wince, 'tis for his good; much better he should contribute his assistance to heal, than have an evil to grow to *too* great excess. In any thing I shall state, I mean not to lower the revenues of the established church one fraction, or to put one shilling out of their Reve-

rences' pockets; but if I can be so fortunate as to propose any modus, by which the clergyman and his parishioners may meet each other with reciprocal blessings, whether my scheme succeeds or not, I hope it may undergo patient investigation.

To keep the dealers in tithes as much in good humour as possible, I shall but slightly touch on some of the grievances the industrious tiller of the ground labours under.

For many years, the tithes of the parish of Castledermot, one of the most considerable in this county, have never varied in their rates, through the hands of different rectors, down to the Honourable and Reverend possessor, who, wisely considering, that "*better is a dry morsel, and quietness therewith, than "an house full of sacrifices with strife,*" has continued the ancient modus; the consequence, he is paid with blessings and with chearfulness.

The accustomed rates are,

	£.	s.	d.
For wheat, per acre - -	0	6	0
— oats, per ditto - -	0	3	0
— barley, per ditto - -	0	6	0
— bere, per ditto - -	0	6	0
— meadow, per ditto -	0	3	0
— fleece - - -	0	3	0
— lamb - - -	0	3	0

These rates were general throughout the county until within these few years. An example of innovation

vation was set by an extensive dealer in tithes; he introduced a mode of charging by the barrel; he estimated a wheat field at ten barrels an acre; he charged the landholder one barrel, and, at the market price, (supposing it could be conveyed there without expence) at thirty shillings per barrel; and he insisted on thirty shillings per acre: the dread of citation, and of the loss of his straw, made the timorous ploughman yield to any terms. As bad example always goes farther than precept, this has been attempted to be followed in many instances; but in the parish of Narraghmore, during the incumbencies of the Rev. Dean Keating and of the Rev. Mr. Beresford, and in many other parishes in the county, the rules of Castledermot continued to be the usual rates; of course, quiet and orderly conduct, and regular payments. Some few rectors employ proctors to value and attend them in person, measuring every poor man's plot of oats. How can such characters expect to meet with that respect, which should ever be merited by a Christian Divine? It is truly said, "That the man, who brings with "him into the church of Christ an ambitious, "voluptuous, or a covetous mind, comes as a "hireling to feed himself, and not the flock: he "comes to steal and to destroy;" and again, "They "are directed to be to the flock of Christ shep-"herds, but not wolves, to feed, but not to devour."

If a parishioner of the established church conceives, that his spiritual guide is an oppressor, and a rigid exactor, can such a parishioner attend the church admonitions of his parson with any benefit? Such attendance would be but a mockery and outward show. If such person, who should receive some benefit from the instructive admonitions and example of the parson, complains, what must the Catholics (particularly of the lower orders) feel at being compelled to contribute the principal part of the subsistence of an establishment, to which they look with a jealous eye, once the support of their church, now guided into another channel, whilst they are obliged to support a second establishment, drawn principally from the hard labour of the poor?

The violence of the persecution of the Roman Catholic clergy has long since abated; the religion has been long cherished, and an expensive seminary for education established; when fitted for clerical functions, they should not be thrown on the lower orders for support; *universal benevolence should take by the hand universal toleration.* The advocates for the present system urge the divine right of tithes, and that they have, under the law of the land, the same right, that every man has to his estate; all this is granted; Abraham paid tithes of all to Melchisedec, the king and high priest of Salem, that is, he

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paid a tenth of the spoils of war, as an offering to the Most High for his success.

At the reformation, much of the kingdom was possessed by religious establishments; these were seized on by the reformers; a part was applied to the support of the clergy of the present established church, and a very great part was given to laymen, who still hold some as their estates, and set and retail their tithes to farmers, sub-proctors, and a host of blood-suckers, who all must be supported by the poor industrious ploughman. Such was the violence of reformation, that any provision for the support of the dispossessed clergy was not then, nor has been since thought on, or called forth by the justice of the legislature; such would, in my humble opinion, be sound policy in the Government, and relieve the poor landholder from what he complains of as his second great grievance; at present, his clergyman would not ride a mile to christen an infant, without a bribe of one crown; all other rites of their church are administered in the same proportion: how can a peasant bear up under tithes and clerical dues? These are the *only objects of redress, within the compass of the cottager's hope;* give him these, and he will bless the government; he will pray for the benevolent rector, who administers wine and medicine in his illness, and for the priest, who will give him

him the rites of the church without being bribed to do his duty.

The landholder complains, that he has taken a poor worn-out farm of one hundred acres, which (either from its never having been well reclaimed or manured, or from being exhausted by injudicious cropping,) has not for years yielded more than 2*l.* to the tithe-man; he gets from his landlord a lease of thirty-one years, at ten shillings per acre; he is opulent, active, and industrious; he purchases manure, burns lime, raises marl, and, in short, dresses his farm so as to produce better crops than any of his less industrious neighbours; his landlord is pleased with his great exertions; his rent cannot, during his lease, be any tax on his industry, but alas! he finds the tithe-gatherer travel hand in hand with his every improvement; as his crops increase, so does the tithe-demand, and in a few years active industry he finds he must pay a second rent of 50*l.*, which has grown out of his capital, his labours, his watchings, his seed, fencing, reaping, binding, stacking, threshing, and marketing, and that to a man, who has never assisted in the preparation, seeding, or bringing to maturity any of his sundry crops; a thousand instances of the truth of this statement could be adduced; let the above suffice with this memento, *that, if the hundred acres had not fallen*

fallen into such hands, the tithe-man should be contented with 2l.

The industrious cultivator would be happy, if, when he agrees with the landlord, he could also make his bargain for the same term with the tithe-man. Where can be the injustice, if tithe was ascertained at one-tenth of the rent? Would not the demanders of tithe, in such case, receive a net tenth of the produce of the estates of Ireland? From the agriculturist they certainly receive a third, but not one-hundredth part from the great and very extensive feeding and rearing farms, which occupy more than nine-tenths of the kingdom.

It must appear evident to every man, that the entire weight of the church establishment falls on *the sweat from the brow of industry*; whilst the feeder of one thousand bullocks does not pay as much as the herdsman for his garden. Can any one argue, that this is just or reasonable? Can it be denied, but that the dread of tithe keeps much land in pasture, which would otherwise give bread to thousands, increase population twenty-fold, do away all necessity of emigration, and make little Ireland not only *a granary to England, but to the whole world?*

But I fear I tire the reader's patience; he will say, all this is well known; but if my Lords the Bishops say that, if tithes are ameliorated, the Church and State are in danger, all argument falls to the ground.

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I set out with saying, that I would not propose aught, that could lessen the revenues of the clergy, and I hope, before I dismiss the subject, to propose something, keeping close as possible to the tithe system, and making the ploughman to go on his way rejoicing.

It would be an easy matter to inquire into the probable yearly income of each living and lay impropriation, and to raise and levy same for any given number of years on *all* the lands of the parish, according to the acreable yearly value of each sub-denomination, to be apportioned by intelligent persons, chosen at public vestry, whose valuation should be conclusive.

To this the slothful rich grazier will object; he will growl at his being put out of his way, and obliged to contribute to ease the burthens of his useful neighbours; but, as such characters are the drones, that wallow in the fat and richness of our dear little island, their voices should not be heard in the great scale of national improvement.

It is objected by the advocates for tithe, that any permanent payment might be oppressive, if they have not an opportunity of raising their tithe income, as the value of land increases; the man, who now enjoys 500*l.* per annum, would not, in case of land doubling its present value, have more to live on in value than 250*l.*: this, if such a case could occur,

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is a good argument, and I endeavour to provide against it.

The assertors, that the titles to tithes and to estates are of equal strength, should consider that, if estates were to be let at undefined rents from year to year, and the landlord at each harvest to view the crops, and exact some proportion in lieu of rent, would any occupier in such case be anxious to till or improve? Would not the kingdom soon become a dreary uninhabited waste? Yet exactly such is the conduct towards the tenth of the produce, the tithe. Let the landholder be ascertained at what yearly rent he is to pay for one and the other, and all complaint is at an end.

SCHEME.

LET the average value of all livings, and lay impropriations, be ascertained by the tithe-books, &c. of the last seven years; when so ascertained, let the parishioners of every description be convened in public vestry; let five intelligent men, but not of the parish, be chosen to state the value of each sub-denomination, and let the average value of the living be apportioned in a corn-rent on each sub-denomination; as suppose, lot, No. 1, is assessed 15*l.* in its proportion of 500*l.* (supposed the average value of the living,) and that the middle price of wheat in

the Dublin market, during the preceding month of February, was thirty shillings; lot, No. 1, would then be assessed with the annual payment of ten barrels of sound fair marketable wheat, to be delivered to the rector, &c. &c. at his dwelling, on every 25th of March in every year for ever; giving a discretionary power to the rector, &c. to decline (by one month's previous notice) accepting of said ten barrels of wheat; but that he will receive in lieu thereof the sum of 22*l.* 15*s.*; 2*l.* 5*s.* 6*d.* having been the average middle price of wheat, during the previous month of February, in the Dublin market; and in case of non-payment of said sum, in the course of one month after such notice, that then the rector shall be at liberty to proceed by action at law for the speedy recovery of said sum with costs, &c. &c.

All the necessaries of life are guided in their price by bread-corn; I have therefore taken wheat as the best fluctuating medium; the rector, who chooses to speculate, may fill his granary in each year with the tenth of the value of grain in his parish, and of the best kind, without the trouble of valuations, proctors, citations, ecclesiastical courts, processes, litigations, and a long host of very troublesome et ceteras; the hardy fellow, who follows the plough, will whistle a chearful note, and the lusty well-fed grazier will begin to think, that he *might as well plough a little;*

Ireland

Ireland would then become the most populous, the most industrious, the most wealthy, and the most contented nation blessed by Heaven. What has Scotland done in half a century? When Lord Kaimes wrote, she did not know the use of an iron harrow-pin; now many of her farms are better conducted, and more profitable than any in England, and agriculture has embraced the whole of the kingdom, all in the little space of *fifty years!* Why? *She has no dead clog on her agriculture.*

Oh! that my country flourished equally. Should the foregoing scheme not meet with the approbation of their reverences, something must be done to quiet agitation, and allay all ferment; the newly adopted plan of charging by the barrel is what the farmer loudly complains of, and, when ninety-nine out of a hundred feel severe pressure, it is high time for a wise legislature to interfere. What objection can there be to state by act of Parliament the following rates, by which the tithe-owner would be paid, and the landholder contented? viz.:

	£.	s.	d.
Wheat, per acre - -	0	8	0
Bere, - - - -	0	8	0
Barley, - - - -	0	8	0
Oats, - - - -	0	6	0
Meadow, - - - -	0	5	0
Fleece, - - - -	0	4	0
Lamb, - - - -	0	4	0

And so in proportion for all titheable articles; in such case, the tithe-owner and farmer could only need the survey of each crop.

I am aware that I have run this subject into great length; I am impelled to it by its urgent necessity; one word more, and I am done. Several years since, the west of Ireland was nightly disturbed by White-boys; no part was in a worse state than the neighbourhood of Callan, in the county of Kilkenny; the living was given to a young Divine, now most deservedly a Reverend; he convened the parishioners of every description; he produced the former valuations of the parish; he declared his readiness to take 800*l.* with the good will of his friends, rather than look for 1200*l.* which had been the former rates; he recommended, that the parishioners should apportion that sum on the different lands, according to their value; that 800*l.* should be paid by instalments on given days, and that, whilst he was incumbent, and that they conducted themselves well, they should never know, what it was to have their fields encroached on by a tithe-proctor. His honourable intentions were eagerly embraced; he subdued the licentious spirit of his parish; he was looked up to by all ranks with enthusiastic reverence; he received the stipulated sum with regularity, which was more than any of his predecessors had actually pocketed out of their high swelling valuations, and such was the influence

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he acquired, that at one time the Roman catholic priest was protected by him, when attacked by a furious mob of his own flock.

Sect. 3. *Use of Beer and Spirits.*

The distilleries have contributed to the increasing the value of land, by the great consumption of grain; this is a stimulative to agriculture. The more extended the markets, and the greater the consumption, by much the more of the lands will be cultivated. The confining distilleries to cities and towns may be necessary for the purposes of excise collection; but, if they could be admitted into unimproved parts of the kingdom, nothing could tend more to the extension of improvement; a distillery of five hundred gallons would, in a few years, make hundreds of acres of the worst lands worth *5l.* an acre. In the present system, a number of men are employed as surveyors and gaugers, to watch every motion of the distiller; if he, by good management, extracts more than a given quantity of spirits, he is fined for having too much; if by bad management his quantity is reduced, he is also fined for having too little: in no case can he conduct his business, but by bribing the gauger, &c. In the present mode it is impossible for an honest man, who regards

regards character, to conduct the business. A host of inspectors are travelled about the country, to watch the conduct of maltsters and distillers; they generally attack the licensed traders, and punish them for every lapse, whilst they neglect the innumerable unlicensed small distilleries, with which the country swarms. The more difficulties thrown in the way of the fair trader, the greater encouragement to the unfair. If those, who guide the excise department, made monthly bargains with maltsters and distillers, the revenue would be increased: if all malt and spirits, made by such compounders, was to be permitted free of additional charge, it would be then easily ascertained whether the business would bear increase of charge, which may be laid on at a future period; then the trade would become respectable, and the excise officers have *time* and *interest* in the detection of the unlicensed, in which they would be zealously assisted by the fair trader.

The quantity of whiskey made by stealth keeps it at a low price to the dram shops. The use of oats, instead of malt in the large distilleries, and the addition of vitriol, to give a fiery strength, has destroyed all the wholesome qualities whiskey formerly possessed; all this operates as a premium to the breweries, which are much increasing in quantity and

and quality of liquor. Whiskey decreases, as good wholesome ale advances in use.

Sect. 4. *State of Roads, Bridges, &c.*

Upwards of 8,000*l.* a year is levied on the county for repairs of roads and bridges; they are in general kept in good repair, but they are many years behind the counties of Louth or Meath. The too frequent use of affidavits hardens the taker, and, by degrees, the compunction he at first possessed gradually wears off; it is often found, that the road-jobber of years does not scruple to stretch his conscience. In my situation, as treasurer, I had much opportunity of detecting frauds. I have overseen many repairs of roads, and conclude that the worst road may be effectually gravelled, at the distance of half a mile from the pit, for four shillings per perch of fourteen feet wide; but then the cars should carry at least six hundred, and the horses and men should work as they would for an individual. Care should be taken to have all the gravel spread backwards on the roads with shovels, and not throw them in loads, and so level their heads; as each half perch is spread, the stones should be raked forward, and broken in the centre. Most roads are made high in the middle, with a rapid

rapid fall to either side; the centre then is only worked on, and soon becomes a receptacle for water; thence ruts are increased by every passing car; but if the road was made so flat, as to leave the smallest droop for the water, all parts would be worked on alike. The best possible shape for a road, is a very easy inclined plane; the back of the ditch at the highest side turned to the road, the dyke or drain at the lowest side, kept open to carry off the water; a fall of six inches, in every ten feet in breadth of road, will be sufficient; viz. in a road of thirty feet, let the upper side be eighteen inches higher than the lower; this will produce a dry foot-way at all times for passengers, and every part will be worked on equally. The powers granted to grand juries are very extensive; many grand juries are scrupulously exact, and indeed too much attention cannot be paid to the expenditure of the public money. In framing any general road-act, the regulations, adopted in the county of Dublin, should be resorted to; conservators, if *they rigidly do their duty*, are most useful, and form a good defence against the tricks of road-jobbers. The keeping roads in repair by contract, in nineteen cases out of twenty, degenerates into a job, and at the end of contract the county must repair the road anew.

Sect. 5. *Navigations and Navigable Rivers.*

The county is intersected by the Grand canal, long completed to Athy; the Royal canal, which, after passing through much of the northern part of the county, continues its line to Westmeath; and the river Barrow, navigable by nature, which passes through upwards of twenty miles of the south and west sides of the county. The great advantages to agriculture, in the cheap conveyance of manures, and in bringing the farmers' products to market, are so evident, it would but take up time to give a general account; suffice it to say, that an acre of drilled potatoe land can be well manured at Athy, by water forty-one miles from Dublin, with the very best manure for ten pounds, and that the produce will sell for twenty, paying greatly for all expence, and leaving the farmer his land in the highest prepared state for a subsequent crop of wheat.

The Royal canal, begun at Dublin in 1790, is to proceed to Tarmonbury on the river Shannon, and northward to Kells, with off-branches to several market towns, as will be deemed expedient. It runs into this county near Leixlip, and passes to Maynooth; thence through Kilcock to Trim. Twenty-two miles of navigation have been already com-

pleted; viz. from Dublin to Newcastle, to and from which boats ply regularly every day up and down, which contributes highly to the benefit and advantage of that part of the county, as well as to the improvement of its commerce and agriculture. It is carried on with astonishing expedition, three thousand men being constantly employed; a considerable progress is now made in the remainder to Mullingar. The ground, through which this canal passes, is so favourable, that one level is six miles in length, another fourteen, and the summit is expected to be seventeen miles in extent, without a lock, into which the inexhaustible supply of water will run from Lough Owill, near Mullingar. The construction of this canal is of the most perfect kind; the locks eighty feet in length, clear pool, and fourteen in breadth; the banks sloping twenty inches for every foot they rise. The trading boats carry from eighty to one hundred tons burden: the passage boats are elegant and commodious. The great quarries, through which this canal has been carried with incredible labour and expence, afford an immense quantity of lime and building stones of the best qualities; also marble of three different colours, dove, brown, and black, which bears a much higher polish than the Italian. Over the Rye-water, near Leixlip, a most wonderful aqueduct has been erected; it is a master-piece of architecture, and so far exceeding

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ing in magnitude any work of that nature in Europe, that it must be an everlasting monument to the credit of the engineer, the late Richard Evans, Esq. Adjacent to this, over the same river, he also on the great road leading from Dublin to Athlone built a handsome stone bridge, which, in honour of the Right Hon. Thomas Conolly's Lady, (she being proprietor of the estate) is called Louisa-bridge; near which a spa of invaluable quality has been discovered, and having already cured many persons of cutaneous, and other various violent disorders, will prove of public utility; it has been analized by the celebrated chymist, Mr. Higgins, having found it so efficacious. The excavation of the bog of Cappagh was another arduous undertaking; besides having to cut through hard strata many feet under the bog, it for a length of time baffled their efforts, as from its soft fluid substance it closed, and nearly filled up the channel, when they ceased working. These difficulties were at length overcome, and the canal itself has proved such a drain to the bog on either side, as to enable a great extent to be reclaimed, which is now brought under cultivation. Several curiosities were found in excavating; in particular, one of the horns of an animal of the deer kind; it measured in length, from the forehead to the extreme tip, five feet, nine inches, and must have been about twelve feet from tip to tip. From the direction of

this canal, running through this fertile county, and through its arable and productive corn-lands, whence, even at this day, immense quantities of goods are carried, great advantages must arise from the cheapness of the carriage, the rates being only one penny a ton per mile on corn, grain, meal, malt, flour, potatoes, lime, sand, fuel, manures, iron wrought or unwrought, and all military bodies with baggage, arms, ammunition, and cannon on their route; one halfpenny a ton per mile on potatoes brought to the city of Dublin; and two pence a ton on all merchandizes and commodities whatever. Not only this county, but the nation at large must benefit when it reaches Tarmonbury, as coals, manufactured iron, clays, ores, &c. from Roscommon and Leitrim, and turf, stones, brick, millstones, &c. will thereby be conveyed to Dublin on the above-mentioned easy terms.

Since the above was written, the great spirit of the Royal canal committee has forced forward their great national undertaking, and gained the lakes and Mullingar country. Already the overgrown woods of Belvedere are (in contemplation) in Dublin, to the great advantage and emolument of the capital, of individuals, of the whole country, and of the deserving men, whose great spirit and perseverance have in so short a time nearly completed this great undertaking.

The

The Grand canal company have completed a floating dock to contain four hundred ships, with three large graving-docks for repairs.

	Miles.
Main trunk of the canal to James's-street -	3
Ditto from James's-street to Lowtown -	21
Continuation of ditto to Baltimore, within eighteen miles of Banagher and the river Shannon - - - - - - -	23
Branch from Lowtown to Athy - - -	21
Collateral ditto on summit level to Milltown -	7
Ditto at Bog of Allen, with a reservoir at Foranfan - - - - - - -	3

The Earl of Fitzwilliam, for the improvement of his Wicklow estate, offered to subscribe 20,000*l.* towards the completion of a canal from Carlow: when the levels were taken, it was found that, from the low situation where it should commence, it would induce a locking up of two hundred feet to gain the object; that, and the great purchase of the excellent grounds of Carlow county, through which it was to pass, joined to the high purchase of lime at Carlow, one shilling and eight pence per barrel, made this work be deserted.

The Grand canal company have it in their power to meet the wishes of Earl Fitzwilliam, to their very great emolument; I have attentively viewed a line, which

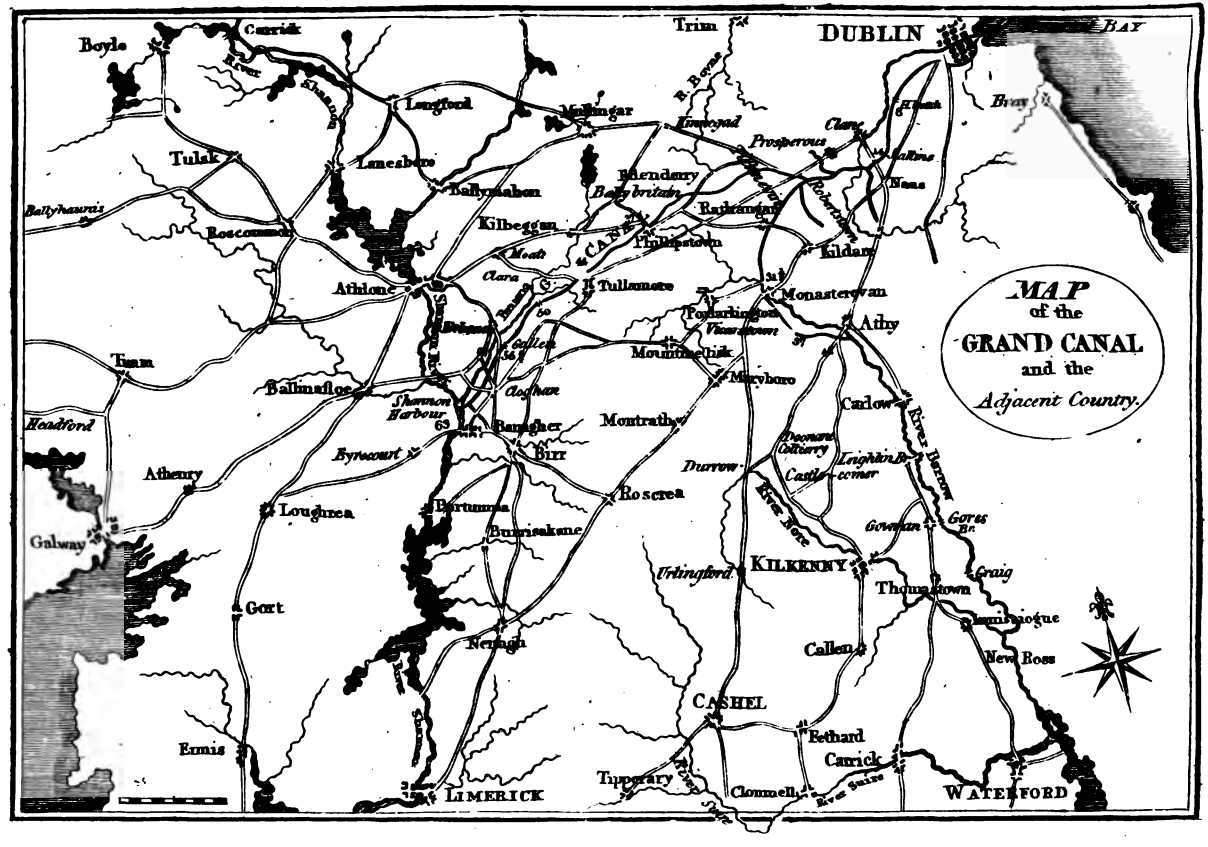
which may be taken up from the Grand canal above Monasterevan, at an height and level to reach the Earl's estates; lime can be had at Monasterevan at six pence per barrel; the finest marble limestone rock is the hill of Monasterevan, and the neighbourhood offering an inexhaustible fund of turf, greatly wanting through the country, where this line would pass; the boats, conveying turf and lime, would return loaded with the produce of Wexford county, of Shillelagh, Carnew, Gorey, Tinnehely, &c.; and finally, a junction may be formed with the port of Arklow.

Should the Grand canal directors ever think on this most useful object, they would meet with most liberal encouragement from the above nobleman, his opulent tenantry, and all the gentlemen of the country.

I should beg to state, that this line would run from the canal by Monasterevan-hill through the bog of Monavollogh; leave the rath of Ardscull half a mile to the left; thence by Inch to Belan and Hollyhoise, leaving Castledermot half a mile to the right; thence towards Rathvilly, and gain the Wicklow hills at Hacketstown, from whence no difficulty would present itself to the gaining Shillelagh country.

To the great spirit of the Grand canal directors any obstacle in this line would be trifling, when the

great


MAP
of the
GRAND CANAL
and the
Adjacent Country.
DUBLIN
BAY
Trim
Boyle
Carrick
Longford
Mullingar
Tulsk
Lanesboro
Ballymahon
Kilbeggan
Ballyhaunis
Roscommon
Athlone
Tullamore
Monasterevan
Kildare
Athy
Naas
Clane
Prosperous
Rathangan
Edenderry
Ballybritain
Philipstown
Portarlington
Mountmellick
Mayboro
Carlow
Montrath
Roscrea
Birr
Banagher
Shannon Harbour
Ballinasloe
Tuam
Headford
Athenry
Galway
Loughrea
Portumna
Burrishane
Gort
Nenagh
Ennis
LIMERICK
Tipperary
CASHEL
Callen
Kilkenny
Urlingford
Durrow
Castle Comer
Graig
Thomastown
New Ross
Bethard
Carrick
Clonmell
WATERFORD
Gores Br.
Leighlin Br.
Prosperous Distillery
River Barrow
River Nore
River Suire
Canal
Meath
Clara
Bog
Esker
Aughan
Byrescourt
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GALWAY

Ballinasloe

Portumna

ROSCOMMON C.o

Lower Lough Derg

SHANNON RIVER

C.o

Shannon Br.

Banagher

Shannon 61¼ Harbour 20

ATHLONE

Birr

Ballymahon

The DISTANCE by Water From Shannon harb.r to ATHLONE 21 m. to Ballinasloe 17 m. to LIMERICK 41 m.

Gillen 56½

Moate

Cornolore 51

KINGS C.o

Clara

Tullamore 44

Philiptown VII 37½ MULLINGAR

Ballyhaunis 31

Portarlington

31½

Edenderry 28½

Vicarstown

Bath Langan

26½ IV

Tickmevin 25½

Athy 42½

Kildare

Lowtown

Carlow

Barrow River

VII

Milltown

III

Robertstown 20

Blackwood Reservoir

KILDARE C.o

Clare

A Map of The Junction of the RIVERS BARROW & SHANNON with the City of DUBLIN

Naas

II

Sallins 14

Grand Canal

Hazel Hatch

DUBLIN C.o

Liffey R.r

DUBLIN

A Perpetual Table, showing nearly the time of arrival at each Stage on the Grand Canal, by S. D. Coll.

STAGES.	I.		II.		III.		IV.		V.		VI.		VII. Athy.		
On the Athy Line.	dist.	time h. m.	dist.	time h. m.	dist.	time h. m.	dist.	time h. m.	dist.	time h. m.	dist.	time h. m.	dist.	time h. m.	Direction.
From Dublin to	8 m.	2 45	14	4 30	20	6 5	26 h	8	31 h	9 30	37	11 10	42 h	12 25	On the Athy
I. Hazelhatch	.....	to	6	1 45	12	3 20	11 h	5 15	23 h	6 45	29	8 25	34 h	9 40	line. Add the
II. Sallins	.....	.....	.....	to	6	1 35	12 h	3 30	17 h	5	23	6 40	28 h	7 55	time of depar-
III. Robertstown	.....	.....	.....	.....	.....	to	6 h	1 55	11 h	3 25	17	5 5	22 h	6 20	ture to the time
IV. Rathangan	.....	.....	.....	.....	.....	.....	.....	to	5 h	1 30	10 h	3 10	16	4 25	at the Stage,
V. Monasterevan	.....	.....	.....	.....	.....	.....	.....	.....	.....	to	5 h	1 40	11	2 55	gives the time
VI. Vickarstown	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	to	5 h	1 15	of arrival at
To Dublin back 12 25	.....	9 40	.....	7 55	.....	6 20	.....	4 25	.....	2 55	.....	1 15	.....	⇨	that Stage.
On the Shannon Line.	IV.		V.		VI.		VII.		VIII.		IX.		X.		Shannon harb.
From Robertstown	5 h	1 25	8 h	2 10	11	3 —	17 h	4 30	24	6 20					
IV. Tickdevin	.....	to	3	45	5 h	1 35	12	3 5	18 h	4 55					
V. Edenderry	.....	.....	.....	to	2 h	50	9	2 20	15 h	4 10					
VI. Ballybritton	.....	.....	.....	.....	.....	to	6 h	1 30	13	3 20					
VII. Philipstown	.....	.....	.....	.....	.....	.....	.....	to	6 h	1 50					
VIII. Tullamore	.....	.....	.....	.....	.....	.....	.....	.....	.....	to	7	2 0	12¾	3 40	17 5
IX. Cornolor	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	to	5¾	1 40	13 3
X. Gillett	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	to	4¼ 1 20
To Robertstown 6 20	.....	4 55	.....	4 10	.....	3 30	.....	1 50	.....	5	.....	3	.....	1 20	

On the Line to Tullamore. To the time of arrival at any Stage, (suppose Edenderry, the Vth Stage,) (2. 10.) add the time of arrival at Robertstown, 12 hours, 5 minutes, (leaving Dublin at 6 o'clock,) you have the time of arrival at Edenderry, (14 hours 15 min.) or 15 min. past 2, and in same manner you will arrive at Tullamore, at VIIIth Stage, at 25 min. past 6 in the evening.

On the Shannon Line. To the time of arrival at Robertstown add the time at any Stage, you have the time of arrival at that Stage; thus leaving Dublin at 6, you arrive at Robertstown at 5 minutes past 12, this added to 3 hours shows the time of arrival at VIth Stage, (Ballybritton) viz. 15 hours, or 3 min. past 3; in the same manner you arrive at Tullamore at 25 minutes past 6.

great value of such line of communication, and the great profits to be made, are taken into account.

In addition to these two great national undertakings, which intersect so much of the county, Providence has been kind in its distribution of the navigable river Barrow; this takes its rise in the hills near Mountmellick in the Queen's county, and, after an extended circuit, is met by the Grand canal at Monasterevan, where it assumes a navigable shape, and has been used in conveying goods up and down river from thence through Athy in Kildare county, Carlow, Leighlin-bridge, Moneybeg, Gore's-bridge, Borris, Graiguenemana, and to the tide water at Ross, a distance of upwards of forty miles, through the most highly cultivated, planted, and improved countries of Ireland. Several obstructions were of course in such an extent of natural river navigation; notwithstanding which, boats of from five to ten tons struggled through, and carried goods at low prices.

The improvement of the river navigation has been for some time in progress; its total rise from St. Mullins to the bridge of Athy, one hundred and seventy-one feet, nine inches. Mr. Chapman, an engineer employed, estimated that, with using part river, the navigation can be completed with nineteen new locks, and eight old ones, for less than 45,000*l.*

According

According to an application to the Irish parliament, 62,831*l.* were expended, and 104,331*l.* were necessary to complete thirty-four miles and a quarter; and within twelve years, 150,000*l.* had been expended in building mills. The tolls then were,

	£.	s.	d.
All goods and merchandise per ton per mile - - - -	0	0	1
Corn, meal, malt, and flour to Dublin -	0	0	1
Loaded boats in each lock - -	0	1	1
Empty ditto - - - -	0	0	6½
Passengers each per mile - -	0	0	1
Empty boats per ton - - -	0	0	½

Frequent, but unavailing application for information on the state of works, &c. which was wished, as a subject greatly connected with this Report, has been made.

Mr. Jessop, the celebrated engineer, viewed the works along the whole line; by his report, if the public has but sufficient confidence in it, nothing of river navigation, yet attempted, promises such perfection. Upwards of 40,000*l.* has been advanced by the navigation-board, on an engagement to complete, in a given time, a five feet navigation; the manner proposed to execute it is, "to prop up the river, so as to throw that depth over all sharps." Unscientific people wonder at hearing this, and think

no

no banks, that can be erected, will support the raising up such an immense body of water, particularly when increased ten-fold in time of flood; but their doubts will vanish when the works are completed, as Mr. Jessop has promised; indeed it appears, that the quantity of land to be purchased to make these great embankments, if added to back drain, would give still water by the side of every sharp, and, if any of these embankments should accidentally burst, the water, which would rush out of the opening, could not return to the river speedily, being prevented by the rest of the embankment, and might do considerable mischief, all of which should be reimbursed by the company.

I trust these hints, which are well intended, if not acted upon, will not be taken amiss.

Sect. 6. *Fisheries.*

There are none in the county. The Greece and Ler, between Carlow and Athy, and all the other small rivers, swarm with the most excellent trout.

The Barrow, when in its natural state, gave a great supply of salmon, twenty and thirty being frequently caught at the bridge of Athy; and all the spring season, when meat was scarce and dear, salmon could then be had for three halfpence and

two pence the pound. Some years since, Mr. Mercer erected a bolting-mill, two miles below Leighlin-bridge, and made a stupendous weir across the river, which prevented the passage of salmon, except in very high floods; the number of locks and weirs erected for the Barrow navigation, &c. &c. have completely shut the passage of all salmon. The legislature, by many protecting acts, has forbidden the raising any obstruction to the fish passing or repassing to and from spawning; well knowing that, if they cannot get up fresh water rivers and small brooks, they cannot breed; in no instance is the gap, prescribed by law, left open in any weir, or even the smallest passage, by which the fish can pass. If every river in the kingdom was equally closed with the Barrow, a salmon in a few years would not be found on the Irish coast.

In the twenty-third and twenty-fourth of George III., made for the express purpose of protecting salmon and other fisheries, it is enacted that, "A "King's share, or space of twenty-one feet, shall be "left open in every river for the free passage of "fish, in order to increase the species: and whereas "there are persons, who form a great chain of "obstructions across rivers, thereby stopping the "progress of salmon and other fish to those fisheries, "which lie above them; be it therefore enacted, by "the authority aforesaid, that no person or persons "shall

"shall form any such obstructions across any such "rivers, but shall leave a free passage, or King's "share, of at least twenty-one feet clear in the "deepest part, under the penalty of 20*l.* for every "time he, she, or they, shall be guilty of such "offence."

SECT. 7. *State of Education, Schools, and Charitable Institutions.*

AT Monasterevan there is an extensive provincial nursery for orphans, where they are carefully clothed, fed, and educated: a diocesan school at Naas is exceedingly well conducted, under the care of the Rev. J. J. Harrison: at Calverstown, Castledermot, &c. &c. are charter-schools. The most extensive public institution is a college at Maynooth, for the education of Roman Catholics; here they are prepared for the clerical functions. The buildings and entire establishment are extending rapidly every year, supported and cherished by the enlightened and benevolent dispositions of the executive power, which, with true philantropy, extends its sheltering, chearing influence to all Christians. In Athy is a good classical school, and two boarding schools for females; there, and all over the county, are numbers of schools, where the lower orders have their children

instructed in writing, arithmetic, and reading; scarcely a peasant, who can muster a crown after tithe and priest's dues, but is emulous to expend it on his little boy's education. No Sunday schools; no encouragement of the neighbouring gentry; no furthering the benevolent plans of Lancaster.

Sect. 8. *Of Absentee and Resident Proprietors.*

All Ireland, and the county of Kildare in particular, has much of its vital strength drawn away by absentees. The late, much to be regretted, Duke of Leinster was a lover of his country; he almost constantly resided at his magnificent seat of Carton, where he set an example of hospitality and benevolence, and by every humane attention to the wants of the industrious people, to whom he gave constant employment, and charitable assistance, he called aloud on the nobility and gentry of Ireland to imitate so great and good an example. His Grace took much pleasure in farming, of which he acquired an ample knowedge, and in this instance set a further example, which would be profitable, and more honourable than the dangling after a court to solicit unmerited place or pension.

The anxiety of the late Marquis of Rockingham to improve his estate induced him to send large quantities

quantities of the most improved implements in agriculture, to be divided gratis amongst his Wicklow tenantry. To show example to his English tenants, he established farms to be separately conducted, according to the most improved Norfolk and Kentish farming, in order that his tenantry might judge for themselves. In such acts as these true patriotism is placed; by such conduct, the Irish squire of 500*l.* a year, who starves in the purlieus of a court, would soon see a planted, improved country about him, and his estate increased four-fold. The absentee employs an Irish agent, too frequently an attorney, whose knowledge never exceeded the limits of the Four-courts, to receive his rents, set his estates, and divide, &c. at his sovereign pleasure; the agent comes down at stated half-yearly periods; from failure of crop or market, some few are not punctual; the agent cannot spare time to look at the means of payment; he cannot be at the trouble of coming a second time; he sends down ejectments, and runs up a bill of costs of twelve pounds, for a few days want of punctuality. How can a tenantry flourish under such hands? How can an estate improve under such management? I would here counsel those characters, who cannot breathe the air of Ireland, to choose for their agents men acquainted with the value of land; men, who are resident on or near their estates; men, who will watch, superintend,

superintend, and encourage the tenant, who will plant and improve; men, who will establish nurseries for the use of the tenantry, supply them with the best males for the improvement of their stock of every kind; in short, men, who will truly represent the absentee, and prefer the improvement of his estate to every other consideration. One such man is placed in the care of a large Wicklow estate; I am not honoured by his acquaintance, but the appearance of the estate and tenantry clearly shows his exemplary conduct; the reverse has thrown much of Ireland into the hands of middle men, the bane of all improvement. The lower orders, who are the agriculturalists, have neither capital nor courage to meet the pressing demands of the agent of the absentee; he is compelled to resort to the middle man, as a necessary barrier; the middle man is opulent, meets the half-yearly claim of the rapacious agent, sees the means his under-tenant has for making his rent, gives him indulgence, and cherishes him in every possible way; hence the middle man has crept in, and become a necessary person between the absentee and the cultivator. Nothing but resident proprietors, or resident agents, can counteract the great evil, the middle man.

A Reverend Doctor, who has an estate near Athy, was so terrified in 1798, he fled the kingdom, selling a large property in the Irish funds at an immense loss.

loss. A portion of his estate was tenanted by a man of fifty for his own life; he subdivided it, and let to a number of very industrious tenants, who occupied for many years. The life dropped suddenly on the 15th of March. The news reached the Doctor, who, forgetful of his former fears, posted to reap the golden harvest. He visited with apparent kindness the different occupiers, and encouraged them with hopes of their not being dispossessed; he found the lands uninjured, well divided with good quickset hedge rows, and had no just cause for displacing tenants, who had grown on the soil from their infancy: they gave the best proof of honesty and ability; they paid him all rent and arrears to the day. On the 25th of March, he took possession of houses, &c. set their lands to a stranger to them and to him, and, without any notice or time to provide, near one hundred souls were turned adrift, without house or hovel to shelter them! But they were Irish, and he non-resident and an absentee.

This will not be credited in Great Britain; such could not happen there.

How can Ireland bear up under the drain of absentees? In a few years she will, by the terms of Union, pay equal taxation with England. Except some most wonderful change takes place in the conducting of the estates of absentees, in the modification of tithes, and in adopting better modes of farming

ing the lands, they must fall, the value of estates must tumble, and Ireland become a poor, reduced, miserable country. Why? English capital, industry, manufactories, and protection are all wanting, leav- it one hundred years in the rear.

Sect. 9. *Of circulation of Money or Paper.*

Bankers' notes, with dollars and brass, form the circulation; much business is transacted by corn-buyers, &c. by drafts on Dublin at thirty-one and sixty-one days sight, which here pass current in payments of rents.

Sect. 10. *Of Manufactures, whether increasing.*

An extensive cotton manufactory was some years since established at Prosperous, in Clane barony, by captain Brooke; he had no knowledge of the business; he committed it to the care of others; of course every thing went to ruin. Lately, most extensive works have been erected at Celbridge, on the river Liffey, by an English company, in which a large capital will be embarked in the woollen line. Cotton mills are also erected near Celbridge by an extensive company from Manchester. The numerous falls

falls, in every mile of the long course of the river Liffey, if generally known to English manufacturers, would induce them to settle where labour, fuel, and every article of consumption is for half price. The Grand canal at every lock furnishes a situation for a mill-site. The extensive town of Athy, on the navigable river Barrow, at its junction with the Grand canal, holds out much invitation to English capital and English industry; the vicinity abounds with mill-sites; it is full of unemployed inhabitants, abounding in fuel, turf at one shilling per kish, and stone-coal at one shilling and four pence per hundred; a most extensive market, where grain, potatoes, &c. &c. are bought for sending to Dublin, and supplying the neighbouring bolting mills; yet with all these advantages, in the midst of a populous charming country, with water carriage to all the world, Athy is neglected, is in poverty, and has not any one manufacture carried on. This must proceed from some great mismanagement, which, it is feared, cannot be rectified during the minority of the present noble proprietor. Such a town in any part of England would soon rival Manchester, Birmingham, or any other in number of inhabitants, and in extent of manufacture; if once an English company was established here, their success would soon induce hundreds of others to follow their example. Athy in 1798, when other towns in the county were attacked

and injured, turned out a large body of loyal men, who screened and protected the lives and properties of every individual for many miles.

Sect. 11. *Of Farming or Agricultural Societies.*

Twenty-five years since, a Farming Society was instituted at Athy, under the patronage of that most revered character, the late George Daker, Esq. and of the Reporter. This flourished for some years; the terms of admission, and of monthly attendance were made so low, as to invite and encourage the lower classes; from frugal management of their finances, and a liberal donation from his Grace, the late Duke of Leinster, the Society were enabled to distribute fifty guineas in red clover seed to the poor renters of land in Athy vicinity.

The chairman for the day was selected according to his seniority on the roll; and he proposed a question in agriculture, to be discussed at the next monthly meeting, where each member came prepared with the best advice and opinion; and after hearing every member, who had aught to suggest, the general sense of the meeting was collected, and entered by the Secretary in answer to the question of the former meeting. In this little infantine society much useful information was acquired and communicated;

communicated; but unfortunately a question having been proposed, viz. what is the general charge for tithes in the county of Kildare? and there being four clergymen of the established church, and three tithe-jobbers belonging to the Society, a party was formed, and the ensuing monthly day they protested against the question, and entered a resolution, that to make any inquiry into the mode of paying tithes was a subject not fit to be entertained by a farming society. Thus, this little well-intended attempt fell to the ground; it has been lately revived. The institutions of similar small societies would be found, if generally adopted, to diffuse knowledge of agriculture all over Ireland, particularly if care be taken to minute the proceedings at each meeting, to be transmitted by the secretaries to the secretary of the general county meeting, if any such there be; if not, to the secretary of the Dublin Society, who will kindly publish them in their Transactions. No general farming society has been yet established in the county of Kildare; should any such be attempted by public spirited men, I beg leave to offer the following for their consideration.

AT A MEETING

OF THE

THOMASTOWN FARMING SOCIETY,

AUGUST 5, 1805,

JOHN POWER, ESQ. PRESIDENT,

The following Premiums were agreed on for this year:

To the owner of the best managed farm, not exceeding thirty acres, the cleanest and neatest farm-yard, &c. &c. &c.—*a plough and harrow.*

To the owner of the second best—*a plough.*

——————— third best—*a harrow.*

To the person, who shall have planted, and preserved from cattle, the greatest number of fruit and forest trees, in proportion to the greatest number of acres in their hands, from 1st of September, 1805, to the 1st of June, 1806—*a set of silver coat buttons and one guinea.*

For the next greatest number—*one guinea.*

To the cottager, not holding more than five acres of ground, who has his house and garden in the best order; the inside plaistered, and the outside white-washed—*two guineas.*

To the second best cottager—*one guinea.*

To the person, who has his fences, whether thorn or furze, in the best order—*three guineas.*

To

To the second best—*two guineas.*

To the third best—*one guinea.*

To the owner of the best crop of drilled potatoes, not less than one acre—*two guineas.*

To the second best—*one guinea.*

To the owner of the best crop of turnips for spring feeding—*one guinea.*

Observe, the turnip seed will be distributed gratis by the Society.

To the out-labourer, who shall have worked the greatest number of days with his employer, from the 29th of June, 1805, to the 29th of June, 1806—*two guineas.*

For the second greatest number—*one guinea.*

To the labourer, who shall have lived the greatest number of years, not less than five, in the same service, and behaved during that time with honesty, sobriety, and industry—*two guineas.*

To the second—*one guinea.*

Observe, they are to produce certificates.

To the best corn-stacker, as shall appear on inspection—*one guinea and a half.*

To the second best—*one guinea.*

To the best hay-rick-maker—*one guinea and a half.*

To the ploughman, who shall plough half a rood of ground in the best manner with a pair of horses without a driver—*two guineas.*

To the second best with a pair of horses—*one guinea.*

To the best ploughman without a driver, and a pair of oxen of his own—*two guineas.*

To

To the second best—*one guinea.*

For every live rat—*two pence.*

For every car used after the 1st of September, 1805, with an iron axis, and the wheels turning thereon, in preference to the common ear now in use—*one guinea.*

To the female, who spins the greatest quantity of flax grown in the barony of Gowran—*two guineas.*

To the second—*one guinea.*

To the third—*one half guinea, or a spinning wheel.*

To the owner of the best bull—*a medal.*

——————————— cow or heifer—*ditto.*

——————————— ram—*ditto.*

——————————— pen of five ewes—*ditto.*

——————————— boar—*ditto.*

——————————— sow—*ditto.*

——————————— draft stallion—*ditto.*

The cattle are to be shown at Thomastown fair on the 29th of June, and the claimants must enter their names with the Secretary by ten o'clock in the morning; all other claimants must enter their names and places of abode before the 1st of June, 1806.

The Society reserve to themselves the power of withholding any premium, where sufficient merit does not appear.

SIMON GRAVES, *Secretary.*

The

The county of Kildare has not hitherto derived much benefit from the exertions of the Farming Society of Ireland; the pursuits of the committee seem to be mostly guided by the propagation and encouragement of the stock, and have made Ballinasloe, in the province of Connaught, the principal scene of their operations. With all due deference and respect, I consider it unwise to localise their exertions and influence, and would beg leave to suggest, that they should extend their annual show to other parts of the kingdom. No doubt, competitors would travel with their show stock to wherever the Society pointed; at present, the farmer of Kerry derives no more benefit from the Ballinasloe show, than if he were an inhabitant of Lapland. The farmers of Connaught make their entire rents by stock-breeding; of course, they want no example to stimulate them, and they have long boasted of their black cattle stock, as justly superior, in a very eminent degree, to any thing to be produced in Great Britain.

The Society have proposed, at next October show, premiums for stallions and bulls, who may have served gratis a given number of females. I shall not take the liberty to make any comment upon such proposed premiums, as the event will show how far they are well or ill grounded; but I consider it my bounden duty to deliver freely, to the best of my

my abilities, such suggestions as occur to me in the course of this work; I do not intend offence to any man or body of men. I should humbly suggest the expediency of transferring such premiums to the importers of the best sires of every species of stock, which, when imported, should be exposed for the approbation or rejection of the farming committee, to be by them directed to central situations in each province or in each county in Ireland; and I should particularly recommend a much greater extension of the improved breeds of swine; and that, in each county, a boar and sow approved by the committee should be so stationed; the boar to be given to the neighbourhood gratis, and the produce of the sow to be sold from time to time at half a guinea per head. Thus would the improved breeds of swine come within the reach of every cottager, and would shortly treble the supply and export of pork and bacon, which at present administers so much to the comforts of the peasant. Whenever the present objects of the farming committee are sufficiently attained, it is devoutly to be wished, that the propagation of drilled vegetables, and the cultivation of red clover may be included in their pursuits. Enough has been done to encourage the gentleman-breeder in the improvement of his stock; it is now time to guide him to artificial food, by which he can support five times the quantity of stock on any given space

space of ground, and surely it is high time to extend their benign influence to the small tillage farmer of fifty acres, who is at present mulishly deficient in agricultural improvements, and requires cherishing and example. Would it not be of the greatest value, if in every county, or, if that be too extensive, in the centre of every province, one hundred acres should be allotted, and conducted by some skilful person, under the directions of the farming committee, for the purpose of setting an example of the best modes of cultivation practised in Scotland or England; the example would be of the greatest value, and the expence, under careful management, would be nearly defrayed by the profits.

Sect. 12. *Of Mills of every kind.*

From the number of excellent local situations, the county of Kildare abounds with bolting and other mills, which bring home markets for grain to the farmer's door. Threshing mills have considerably extended. Mr. Neale, near Rathangan, with true public spirit, took up Denil of Glanery, near Rathangan, who showed a mechanical turn, and sent him for improvement to take drawings of Mr. Christy's mill near Belfast; he has erected for Mr Neale a very excellent machine, and has since been

employed by several persons; he has erected lately on a farm of Mr. Hendrick's at Tully, near Kildare, a most excellent mill, which, that gentleman assures me, with three horses threshes eighty barrels of oats in ten hours. Underneath the large wheel Mr. Hendrick has constructed a rack and manger, which holds forage, and yields shelter at night for eight working horses. The small grist mills for grinding and making oatmeal are innumerable.

Sect. 18. *Of Plantations and Planting, &c. &c.*

Except in Carberry, on the estate of Ambrose O'Farrell, Esq. the *Forest of Oaks* has been completely destroyed; no other natural wood within the county being worth mentioning. About fifty years since, the grandfather of the present Colonel Keating under-drained and enclosed forty acres of very bad, sour, swampy land; he trenched, ploughed, and carefully fallowed for two years, until he reduced the whole to garden fineness; he then sowed thickly the seeds of the different kinds of trees, which formed an extensive nursery, that enabled him to pursue his great scheme of planting the rest of his extensive estate. For the last thirty years, the noise of the axe has resounded through these forty

forty acres; they have yielded from time to time 10,000*l.* to the occasional possessors, leaving behind an ample stock of growing wood. The late Christopher Birr, of Carberry barony, about thirty years since planted very extensively, and has left a source of much wealth to his son. I viewed in his neighbourhood on the estate of C. Nangle, Esq. some very handsome young plantations, and was much pleased to find him admire the timber sallow, which in all moist wet grounds, (with which this county abounds,) grows more rapidly than any other tree, yielding a very valuable substitute for oak bark, which in the last twelve years has more than doubled in price. In Mr. Nangle's demesne I admired good, healthy growing white-thorn hedges in turf bog, owing to the care and attention of Mr. Nangle, who made a trench of one foot filled with earth, in which he planted his quicks. The demesne of Carton is surrounded and interspersed with much planting; some careful thinning and pruning would add much to the growth and health of the trees. It would lead me too far to enter into every gentleman's ornamental improvements. Colonel Wolfe, at Forenaghts, near Naas, has planted very extensively, successfully, and with much taste; whilst other planters are solely intent on propagating trees of the fir tribe, he has introduced a very great quantity of well growing ash, wisely considering, that twenty

years hence, from the present neglect of its cultivation, Ireland will not grow as much ash as will make handles for its ploughs; he carefully attends every year to the lopping and thinning of his trees; to make his lower plantations more perfect, I humbly conceive, that he should put down in all low, moist situations, a number of truncheons of the timber sallow, which would shelter, draw up, and cherish his younger trees; and they might be cut away, whenever they were considered an incumbrance. At Harristown, near Kilcullen, that very great improver, John La Touche, Esq. has formed within a few years most magnificent and extensive plantations; he has adopted very much the plan of grouping each kind by itself, which prevents their injuring each other, as they invariably do, when planted promiscuously; in group plantations, if executed with taste, you have an immediate dotted carpet of various hues. All planting should be at first thickly placed for the sake of shelter, and should be thinned, transplanted, or cut away as they grow up too thickly. Nothing is more difficult than to prevail on gentlemen to thin their young plantations; if drawn up to too great height, they produce a number of naked poles, but no trees. Mr. Bagot of Nurney has planted an extensive screening in a very poor soil, which is a great ornament; he has also planted a very extensive gravel-hill, thrown up, as is supposed,

posed, by the flux and re-flux of the water at the deluge. In this every kind of tree grows much better, without any depth of soil, than in the plantations he has made retentive of moisture. At Kildangan-castle, D. W. O'Reilly, Esq. has planted with the greatest success: in a high gravelly situation he planted some acres mostly with fir; after a few years the trees appeared stunted, and he with judgment planted young firs in all the intervals, which were of course sheltered by the former planting; they have considerably outgrown their protectors. Though but begun a few years since, Mr. O'Reilly's demesne exhibits much ornament to the country: how highly must he be gratified in seeing his labours flourish? In the demesne of Moore-Abbey is one of the handsomest and best planted hills in Ireland; the plantations are very extensive; they appear to have acquired maturity some years since. It is a great mistake in the possessors of grown timber, when they perceive their trees have acquired a full growth, not to cut them; every year they decrease in value; the owner loses the interest of what they would have produced, and also the yearly growth of the copse or other young plantation. When woods or plantations advance to maturity, a certain portion should be cut, copsed, and transplanted every year, by which the owner would preserve the beauties of the forest, and yearly raise a large

large supply of cash. At Bert, the estate of Mr. Burgh, near Athy, is a thick plantation; in the avenues and hedge-rows the trees are uncommonly well grown, but in the thick plantation *not one tree.*

A very few years since, Mr. James Butler, on his farm at Knocknagee, near Carlow, was induced to enclose and plant several acres of poor furze ground; he argued, that a tree would not grow in it: they have succeeded beyond all expectation. No improvement will pay so greatly as the planting such land.

To the youthful reader possessed of land, whether estate or farm, I beg to call for serious attention: it is in the power of every person possessed of land, and who has a prospect of a young family, to make a provision for them upon cheap and easy terms: had I the same knowledge and experience in planting thirty years ago, which I now possess, I should have made ample provision for a very numerous family, besides the advantage of ornamenting, sheltering, and thereby considerably improving my different lands. I labour in the present work to contribute my mite to the improvement of my country. The youthful reader may, if he chooses, reap the full benefit of my experience. Take one, two, three, four, or five acres of dry ground; work well and deeply with the plough for a year; no trees succeed better in a close situation than larch, and as I consider

consider larch timber the best that can be grown, I have given it the preference; let the landholder put down in nursery ten thousand seedling larch for each plantation acre; he chooses to plant in rows eighteen inches apart, the intervals to be worked by the spade; in an acre there are seven thousand, eight hundred and forty square yards; for the sake of round numbers, I shall call the acre eight thousand yards; two thousand of the ten thousand seedlings, that were put into the nursery, may have failed. When you are ready for planting, plough the acre into three feet ridges, harrow lengthways, split each ridge with the plough, put in the eight thousand plants in the centre of each ridge; they will then be rows of three feet apart, and three feet from plant to plant; horse-hoe the intervals for three years, taking care to tie up the horse's head, that he may not bite the tops of the trees: after the third year take away every second row; they are then worth three pence per tree, either to make sale of them, or to extend your plantations; later than that they should not be transplanted. When every second row is removed, plough and harrow the ridge, on which they stood, trenching with the spade sallows eighteen inches apart in the rows; the larch will then stand in rows six feet asunder, and three feet from to plant, the intermediate rows of osiers not interfering with their growth, in which situation they will bear to stand for

for nine years: then cut with the axe every second tree, which for paling, cabin timber, &c. will be worth one shilling per pole. The remaining two thousand will then occupy six feet square each; they are to be left so for thirteen years, viz. twenty-five years since they were taken from the nursery; they are then worth at a low calculation ten shillings a tree, or, if left for ten years more, they will be worth much more than thirty shillings a tree.

RECAPITULATION.

	£.	s.	d.
Four thousand trees taken from the plantation, after three years, at three pence each -	50	0	0
Two thousand poles cut in the twelfth year, worth - - - - -	100	0	0
Remaining two thousand trees in twenty-five years, at ten shillings - - -	1000	0	0
	1150	0	0
Deduct the above 150*l.*, which, with the osiers growing in the intervals, will amply pay forty shillings an acre for twenty-five years, and all contingent expences of planting, &c.	150	0	0
Clear profit in twenty-five years - - -	1000	0	0
And if left to be thirty-five years old, they will be worth - - - -	3000	0	0

The

The above calculation is made for light, dry grounds: in rich soils, the profit will be doubled in twenty-five years. At the entrance of Mr. Pomeroy's demesne at Rathangan, are several larch growing in a rich situation, not twenty-five years old, which contain each nearly a ton of the most valuable timber

PREMIUMS ADJUDGED BY

THE

DUBLIN SOCIETY.

	A.	*R.*	*P.*		*Date.*
Richard Griffith, Esq. planting oak	5	0	0		1787
James Brownlow, Esq. enclosing and planting	13	0	0		1791
Maurice Keating, Esq. ditto	10	0	0		1791
Rev. Mr. Burrowes, planting Danish forts	0	1	35	planted	1791
	0	0	30	enclosed	
Christopher Bagot, Esq. planting ditto	2	2	0	planted	1791
	0	3	13	enclosed	
R. Griffith, Esq. planting ditto	2	0	0	planted	1791
	0	2	20	enclosed	
Christopher Bagot, Esq. planting ditto	1	2	0	planted	1794
	0	2	18	enclosed	
T. J. Rawson, Esq. planting oak	12	0	0		1794

Note.—All the above have been well enclosed; Mr. Bagot's in particular have flourished exceedingly; Mr.

Brownlow's plantations, being on a bleak bog, required to be re-planted; Mr. Keating's have not had sufficient attention paid to the thinnings.

The acts for the encouragement of planting, in giving the tenants a property in trees planted and registered, either have failed from the natural slothfulness of the farmers, or from some other latent cause; on the extensive estates of the Duke of Leinster, not a second tenant has availed himself of the registering act. Nothing appears to me so strange, as that the owner of an estate, on which perhaps there are a number of valuable hedge-rows and other timber trees, should let to farm for any given term, without exacting the full value for all grown timber; if the tenant is not able to pay down the full value, he should not possess either timber or land; what other security can the landholder have for the property so liable to waste? The growing scarcity of timber calls aloud for the most watchful care of the proprietors of estates all over the kingdom. There are some remains of the careful management of our great grand-sires; they knew what must happen in another century, and they appear to have been well acquainted with the value and growth of ash; instead of trusting to a casual tree in hedge-rows, which injures every crop in its vicinity, they

they planted all in groves, without the interference of other trees. Forty years since, as many of my readers may recollect, the face of the country was covered with these ash groves; now, scarcely a vestige of them is to be found, and not one perch of ash plantation, except in the solitary instance at Forenaghts, is to be traced: any attempts in planting ash are to be found in new made hedge-rows, where, so soon as they are fit for a plough-wattle, they are broken. All this could be easily remedied, without appealing to the Legislature, by special clauses in the lease, wherein the landlord should acknowledge the receipt from the tenant of a given sum of money, being the amount of the value of all timber and other trees standing, growing, or being in or upon the demised premises; the landlord covenanting to pay the tenant the full value of all timber and other trees standing, growing, or being in or upon such premises at the expiration of the term granted, or other sooner determination of the demise: such valuation to be made by two persons indifferently chosen, with a power of calling in an umpire, and, in case the landlord should not purchase according to the valuation, the going-out tenant should have six months to fell, carry away, and dispose of the same. This would give an interest to the tenant in the protection of every twig, and stimulate him to enclose, plant, and ornament his farm. It may be

asked, what is the landlord to benefit by all this? I reply, that he will have the gratification of having his estate planted, sheltered, and ornamented without costing him one shilling, as, in case of his dismissing the former tenant, the coming-in tenant will have to pay for all trees young or old left on the premises, which are to extract their nourishment from the soil, for which he covenants to pay rent.

There is not any nursery in the county for sale of trees, save some extra trees, which that neat, intelligent gentleman, Mr. Farmer of Ballitore, has in that beautifully improved spot, Poplar-hall, in the midst of the great bog of Narraghmore.

The want of nursery establishments is much felt in the county. Mr. Chritchley of Grangebeg has planted many trees at three and four years old, bought of nursery-men from Mountmellick in the Queen's county; this year Mr. Chritchley has adopted a better method, by putting one hundred thousand seedlings into his own nursery ground, from whence a tree will not miscarry. Mr. Chritchley purposes yearly putting down the same number of seedlings; no man has better situations in Kildare and Wicklow for extensive plantations; he is young and active, with a very large infant family, and is taking the best method to increase their provision and his present great opulence.

Ash

Ash timber is become so scarce, that what formerly sold for one shilling and four pence, and one shilling and six pence per foot, now sells at from four to five shillings. Foreign timber is mostly in use, and varies in price, according to the difficulty of importation.

Planting is a subject of such value to the landholder, that I cannot avoid again pressing it. Good divisions and shelter are so necessary in the improvement of land, or in its common occupation, that they cannot be too much urged. The want of nurseries often prevents the farmer either making thorn-hedges, or planting a tree; to remedy which, he should have his resources within himself, to be ready to resort to at all times; one rood of ground well trenched up, and allotted to nursery, will supply a farm of three or four hundred acres; the raising of thorns I have already mentioned; the usual way of growing crab-quicks is, to spread the pulp at November fresh from the cider press, and cover it with earth in beds. A better way is, to put the pulp into water, and stir it frequently; the pulp will rise, and the pippins fall to the bottom; when separated, pour off the water, dry the pippins, and put them in a dry situation until March; then put them into drills of eighteen inches apart, which will allow of their being dug between and cleansed; indeed, nothing cultivated in field

field or garden, but should be so placed, as to admit horse or other hoeing.

Ash, is most easily propagated by collecting the keys in November or December; store dryly until March, then put out in drills.

Elm, is propagated by layers, or by digging a deep trench, about six feet from the tree, which will be soon filled with shoots from every wounded root; these slipped off, and put into nursery rows, will soon become trees, which may be engrafted on, or not, at pleasure. Another way is, to dig and smooth the mould, for a circle of twenty feet round an elm, in a protected inclosure; about the middle of August watch for the ground being covered with the fallen elm seeds; they are so small, that they will not bear any covering but some fine mould and ashes sifted through a sieve over them; at the approach of winter, give a covering of dry litter, rake off in February, and you will be rewarded with ten thousand seedlings.

Ash and Beech. Collect the acorns and mast when ripe, put them immediately into drills of eight inches deep, fill six inches of the drill with tops of French furze, cut small to prevent mice, cover over; this I have found a better and more certain mode than deferring until spring.

Sycamore,

Sycamore, a most ornamental tree, is most easily reared from the keys collected when half brown; if not gathered in that stage, they are dispersed by the winds, and devoured by birds; they should be kept in a dry situation until March, then sown in drills.

Birch and Alder, may be raised by gathering the seeds, when ripe; in all woods, where they have been cut, the ground will be filled with seedlings.

Timber Sallow, grows, like all others of the willow tribe, from slips or cuttings; there cannot be a more useful tree on a farm, if kept protected until ten feet high, so as to be out of the reach of cattle; they may be planted out in all low grass land, four, five, or six on an acre; they will furnish every second or third year, by cuttings from their heads, a large quantity of wattles for making hurdle-work, &c. &c. &c. or for further planting.

Osiers, are but little planted in the county, though it contains *forty thousand acres*, which can never produce one-tenth of their profit; there are twenty-two acres of an island near Moore-abbey demesne planted, which are leased at five guineas an acre, and esteemed a great bargain.

To have the planting perfect, the land should be turned up with plough and spade, eighteen inches deep at least; if the situation will admit, the

the plough should round the entire piece, and turn over the lay-sod; twenty men with spades should be stationed one by one all round the piece, dividing it into twenty parts. As the plough passes each man, he should dig the understratum, and cast over the lay turned by the plough, so far as his allotment of the work reaches, and so on until the whole is turned over; in this way an acre will be trenched in a day; if the plough cannot be introduced, the whole should be done with the spade: the planting in ridge and furrow is erroneous. When the piece is prepared, put down cuttings in rows, sixteen inches apart, and sixteen inches from plant to plant; when four rows are put in, leave an alley or interval of two feet unplanted, and so on until the whole is completed. Osiers are in such request, that the expence of purchasing sets deters many from planting. The landholders of the county of Limerick are well acquainted with the value of osiers; there, not a bank to a cottager's garden but is filled with them; they are cut every third year, and produce 20*l.* an acre at the cutting. Some intelligent men of that county, with whom I conversed, prefer making their plantations from the refuse tops; these they slip, and put in each slip instead of a cutting, leaving the small tops uncut; in this they are left for a year, and then are clean cut

cut over close to the earth; it is reckoned that these refuse tops, which are had for taking, establish themselves in this way better than the cuttings.

I hope enough has been said to rouse any latent spark, if any such be in the farmer's composition; if there be none, if all the authors from Evelyn to Forsyth were before him, they would not avail.

GARDENS AND ORCHARDS.

A garden to produce vegetables is unknown to an Irish cottager; he seems to stand on the out-potatoe garden, and a few cabbages at his dwelling; in order to ensure the safety of vegetables in out-field culture, it is necessary they should be also planted in the cottagers' gardens. In Carlow they well know the use of parsnips.

Every occupier of fifty acres should devote two to the maintenance and comforts of his family. One acre should be unincumbered with all kinds of trees or bushes, and should be worked with the plough and hoe, and thrown into a succession of thirds; viz. one-third under early drilled potatoes, to be planted with cabbages as the potatoes were removed; this, being (as supposed) well dunged for the potatoe crop, will the next year give carrots, parsnips, onions, peas, beans, and other vegetables, that may be want-

ing in a farmer's kitchen; the third year cabbages. The other acre should be planted with one apple, pear, or plum tree in the centre of each square perch, about fifty-three on the acre; these should not be placed in straight lines, as is common; if put down irregularly, one may stop the progress of a blast, which might otherwise pass along an entire line. All fruit trees in enclosed gardens, where cattle are not admitted, should be kept down to ten feet in height, the centre in their infancy kept open by a hoop, in the same manner as gooseberries are or ought to be treated; in all the openings between the trees, put in gooseberry, rasberry, and red, white, and black currants. To serve your fruit trees, this acre should get a digging in March, and another at midsummer, when the whole should be sowed with winter turnip; this will keep the ground clean, free, and open, and, after the second year, the expence and trouble of labour will be trifling; but do not spare the knife in keeping down and thinning every thing. A fence between the vegetable and fruit garden will be most necessary.

In walled gardens, one-third of the wall is lost by the manner of fan-training in general use; the branches shortly come in contact with each other, but, if trained horizontally, the branches can be introduced between each other quite to the stems of the next trees; and in a horizontal situation all fruit

fruit trees are thrown more into bearing, and do not require so high walls as the fan-trained trees. I constructed a paling, with eight feet posts at ten feet distance, the pales, six inches deep, inserted into the posts *on the flat;* these bear two rows of laths of four feet to gain the top; on one side the paling, plums are planted and trained to the lathing on that side; on the opposite side, pears are planted and trained to the lathing on the back side, so that, by the paling being on the flat, the plums and pears are kept six inches asunder, and cannot interfere; from every appearance, these trees so placed will bear better than their fellows against the walls. It is a simple, cheap plan, and will enable any person with a small walled garden to command great quantities of fruit.

SECT. 14. *Quantity of Bog and Waste Ground;—Possibility and means of improving it;—Obstacles to it, and best means of removing them.*

I HAVE in the Introduction mentioned, that the bog of the county contains upwards of forty thousand acres; of course, the adjacent wet grounds may be fairly estimated at twenty thousand, which calls aloud for a general drainage act. Without some mode of compelling the landholder, who forms an obstruction to great and extensive drainage, he never

can be brought to contribute his assistance, or to suffer his draining neighbours to be relieved by any drain through his grounds. Nothing could better show the injury done to a neighbourhood by ill-placed mills than that, which formerly stood at Kilmore, near Edenderry; the late Christopher Borr, with a spirit almost peculiar to himself, has with the assistance of Mr. Williams made an immense drain for three miles, by which a fall of eight feet has been obtained, and the water, which lay on the surface of the lands, and went south-west to supply the mill, now takes a direction north-east to the river Boyne. The good effects are already felt, and if Mr. Borr's spirited offer to be at half expence in continuing the drain through another gentleman's lands, where drainage is much wanted, had been accepted, the benefit would be incalculable.

The Boyne, remarkable for the battle near Drogheda, takes its rise in Lord Harberton's demesne, and runs three miles to Edenderry, whence it runs some miles in an almost stagnant state, and very serpentine direction, by which much of the adjacent flat lands are swamped. If the course of the river was somewhat straightened below Edenderry, and if Mr. Borr's drain was brought to meet the river above that town, with a little sinking at Kilmore-mill, the water could be brought by that drainage to fall into the present course of the river below Mr. Palmer's,

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at the old monastery of Ballybogan, a course of five miles, which might be immediately applied to turf navigation; another very useful drainage might be made from Mr. Borr's to the right, through the valley of Ballycowar and Kilrathmurray to the Boyne, a mile and a half lower than Ballybogan, with an increased fall of six feet. Turf, at little expence, may be conveyed to Clonard and the adjacent county of Meath, destitute of turbary, which is here a nüisance; and it is not unreasonable to hope, that the towns of Edenderry and Clonard may by water be brought within four miles of each other, instead of six by post-road, and upwards of nine by the course of the Boyne. The weirs of the river Barrow at Milltown, above Athy, where the ruins of two mills are placed, of little or no value, are a great obstruction to the drainage of all the country up to the great bog of Monavollagh, containing three thousand acres; all the intermediate grounds are a swamp, covered with water, when the smallest flood is in the river Barrow. A large estate of Mr. Grattan's, at the Queen's county side of the river, is subject to a similar annoyance. For ten miles up the river to Derryleake, the floods are held up by Milltown weirs; thousands of acres every winter are covered for many months under water. The Barrow, in time of flood, carries down from the hills of Mountmellick a sharp, red,

red, hungry sand; an early flood frequently catches the uncut meadows, and covers them with a coat of this sand, which renders the meadow-grass completely useless: it is but a low calculation to say, that these decayed mills may injure the properties adjacent to the river in the annual sum of 5,000*l*. besides the injury done to the climate by so much stagnant water, and by preventing the possibility of making any effectual draining.

Sir John Macartney, and Mr. Cassidy of Monasterevan, have reclaimed the surface of several acres of red bog; dung, lime, and gravel have been tried; I have viewed and compared each, and consider gravel much the best; for further particulars on this part of the subject, I refer my reader to a letter to Sir John Macartney. In almost all bogs of any considerable depth, it is found that a quantity of water lies in a body between the turbary and the gravel, which keeps the turbary in a buoyant state, and contributes to the growth of the fungus substance; a turf-cutter well knows it, and with fear and caution approaches the bottom of the turf-hole, which frequently bursts up through a close covering of two or three feet, and would overwhelm him in a moment, but that he leaves benches uncut to secure his retreat. We have an instance in the county of Tipperary, within a few years, of a bog so overcharged with underwater, that it broke from its ancient situation, and travelled

travelled in a compact body over several miles of country, bearing down houses, trees, and every thing that opposed its progress, until it reached the river Suir, twenty miles from its original situation; of the bog turf has been made. Had the under-water of this bog been tapped, and carried off from any one point, this event could not have happened. All persons, who wish to undertake the drainings of bogs, would do well to view the great works effected by Mr. Birch of Roscrea; he took a large tract of bog, in the centre of which stood an immense lake; he made a surrounding drain to the gravel to obtain a fall, and a drain direct from the fall into the lake, which he laid so completely dry, as to have it in a little time fit for tillage. The only thing, in which Mr. Birch was deficient, was in not using Elkington's auger: that would have saved him in his circular drain much of the expence of sinking, as, if an upper drain be formed of moderate breadth and depth, and in the course of it the auger be frequently applied to pierce down to the gravel, the water, which will thus get vent, will, by the pressure and weight of the bog, be forced up through the auger holes, and so run off in the drain.

Most men begin bog improvement by attempting drainage on the surface. I trust the reader, from the foregoing premises, will join with me in making his first attack on the under-water, after he has acquired

acquired the necessary falls, which are to be had in every possible situation, *provided his neighbours will not give opposition.* Mr. Bagot of Nurney, four miles south of Kildare, has been engaged for years in the drainage of an extensive bog; he has formed drains in right lines. Six feet under the surface, he has found the remains of an old plantation of fir timber; wherever he found a second in the line of drain, he was sure of finding a fallen tree at the end of every ten feet; when these were removed, he sunk the drain six feet more to the gravel, where he found that there had been (perhaps before the deluge) a promiscuous growth of trees; these, overthrown by the flood, produced a turbary, which, after some ages, may have grown to eight or ten feet high, on the top of which was placed a regular plantation of fir trees; these in process of time fell; the growing fungus soon surmounted the fallen firs, and in the course of centuries buried them six feet.

Here is food for the antiquarian. This one fact alone should establish incontrovertibly, that in the earliest ages Ireland must have been thickly peopled, and much more carefully planted than at present. The high Narrow hill forms one boundary to the bog; Mr. Bagot cut through it to gain gravel for neighbouring roads, and to make communications through his bog. An overseer of a road, seeking for gravel, sunk more deeply, and discovered a foot of moor,

moor, similar to that in the adjacent grounds, under this immense hill of gravel, which fully marks its formation.

In many places where the plough has not travelled for centuries, when brought into tillage, circles of ten or fifteen feet diameter appear full of some burnt substance; the ploughmen call them Fullagh Fion, the fire of Fingal.

TO SIR JOHN MACARTNEY, BART.

SIR,

As agricultural inspector of the county of Kildare, I lately took the liberty of viewing your very great improvements at Derrylee; on my way thither I observed a bank, commonly called rabbit-sand; it is like it in appearance, but nothing can be more different in quality; I first knew it in the county of Carlow, where the farmers, who use it, call it the golden mine: its powers of adhesion are so great, that a bank cut perpendicularly down will never give or fall by any weather, and I believe on trial it will be found one of the best manures ever discovered. I was much pleased to discover, that you had at your lodge an immense quantity of it, and I trust, that it will repay you the trouble of reading this.

Your grounds are well laid out, and your plantations are in a good state; they only want thinning, and some protecting paling. I have tried with good effect live posts of the Lombard poplar, timber sallow, or alder cut into lengths, and, put down in the winter months, they will certainly grow; to these any rough pales may be nailed. Quicks, privet, and other shrubs, planted in a trench on the surface within the paling, will soon form a fence, to which I would add some slips of rose trees; they will flourish, and greatly ornament the thickest hedge.

Your experiment on potatoes in bog is of the greatest consequence to Ireland, where so many millions of acres are dreary, desolate wastes, and one great cause of the frequent rains our climate is infested with. I had several of the potatoe stalks dug; the crop is abundant, but I think the sets had not sufficient covering; the trenches should have been much wider: the lime is at present in lumps; its effects can only be produced by its being applied in a dry powdered state. Your experiment will, no doubt, encourage you to proceed with vigour in the further reclaiming. To enable you to do so, you should attack a fresh piece of the bog with potatoes, and summer till, and lay out the present piece next July with transplanted rape and grass seeds (ray-grass.) My motive will, I hope, plead my excuse for offering my opinion to a gentleman, who seems

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so well fitted to carry on every improvement without my feeble aid; my desire of doing good impels me to urge to you the necessity of opening a road, at least thirty feet wide, through the centre of the ground you intend reclaiming; drains should be made on either side, *at the first year four feet deep*, sinking them each year four feet, until you reach the gravel.

Elkington's auger should be introduced the first year to bring the water up into the drain, and a fall should be acquired; I think the fall with you is to the ditch near your offices. On each side of the intended road, I would by other inside drains mark out a piece for planting Scotch fir, &c. and I would recommend the sub-dividing the bog into five-acre divisions, with plantations between each; this would be a deal to effect, but to your enterprise it is as nothing. I should hope to see much of it effected the ensuing summer; the surrounding drains would lay every thing dry against you came to attack it, and the water in the drains might be occasionally *held up*, to carry by boat the gravel, lime, or dung to the different compartments. I should intreat your giving the golden mine a fair trial on your bog the ensuing season; the manner I would propose using either that or lime, would be to cover the surface of the bog with either; dig in, nine inches deep, a bed of nine feet square, surround it by a trench one foot

deep, four and a half wide, thrown on the nine feet plot, raising the centre higher than the sides; with dibbles put in potatoes in holes one foot apart, and chop and lay the surface smooth. So go over any piece, that may be marked out for this experiment; by this plan, the surface would be more consolidated, the digging of the potatoes would mix the soil and manure, one half of the understratum would be exposed to the sun for six months, the banks would be easily levelled, and the whole surface brought to a great degree of tilth. I only throw out these loose untried hints for your better judgment; if I can in ever so small a degree serve you, I serve the public good, which must profit by your example, and will greatly repay

Your very obedient Servant,

June, 1801. T. J. R.

P. S. The corn-gravel of the country, mixed with a tenth of quicklime, would form an excellent top-dressing for your uplands; some of the bog would be a good addition: a heap composed of bog surface and golden mine, I am convinced, would do wonders.

Since the above was written, I have had much inspection of bog, &c. &c. The result is, my conviction that the best mode of improving bog is, to mark out the bog, after gravelling, liming, or dunging, into squares of twenty feet; cut with a bog-knife every second

second square one foot deep, and embank and raise in mounds on the uncut plots or squares; by this, one half of the surface will be heaped up on the other. When chopped and mangled, dibble in potatoes sixteen inches deep; when they appear, cover with the shovellings from the cut part; make drains in straight lines through the centre of each cut, eighteen inches wide, and eighteen inches deep, connecting them so as to form an under-drainage; when the potatoes are digging, begin in the centre of each square. The second year dibble in potatoes, rape, or any vegetable at pleasure in the bank squares. At the end of the second summer look well to the eighteen inch drains, see that they carry away all surface water; then get loppings of hedges, briars, or furze, make them into faggots, so as that they can be pressed half way down lengthways; when the crops are off the standing squares, throw back the mould to its original situation. By the exposure of half to the influence of the sun for two summers, the draining, and the weight of the cut thrown on the uncut, which will compress and force out all surface water, in the two seasons the uncut squares will be so rotted, that the whole will be found mellow and so dry, as to admit plough and harrow; immediate sowing with grass-seeds, white hay-seed, and ray-grass should follow.

I constructed,

I constructed, and have used for years a knife for cutting bog, paring the sides of drains, &c.; on trial, it will be found that a man with it, attended by a forkman, will do more than ten men with spades: straight blade two feet long, with a socket to insert long or short handle as may be necessary, two inches and a half deep, well steeled, and cut as a reaping hook; as each piece is cut, it is removed by the fork. Deep drains may be scoured by this and a drag, without the labourers going into them.

Sect. 15. *Habits of Industry;—Use of the English Language.*

So far as industry consists in working on potatoe food, and bearing all vicissitudes of climate without a murmur, no nation can boast more than the hardy sons of Ireland; such is their desire of acquiring means to grow their potatoes, that, wherever a cabin is placed by a public road, it becomes a nuisance by the owner and his children constantly scraping off the gravel, when reduced by the passage of carriages; there is no want of industry among the lower classes; they are all exceedingly attentive to every thing, in which they are *themselves* interested. Right sorry I am to make the remark, but regard for truth obliges me to say, there is scarcely an instance of an Irish

Irish peasant giving a preference to his employer's interest. You must ask the lower orders a question and repeat it, and then will hardly get a direct answer. From its vicinity to the capital, the English language is very general, and the Irish seldom used.

The regiment of Glengarry, Scotch fencibles, who spoke with correctness the ancient Celtic, though they understood the corrupt Irish spoken by the natives, could scarcely make themselves intelligible to them. I had much pleasure, and instructive conversation with Colonel M'Donald, and the Rev. Mr. M'Donald, and by their reading with me the works of General Vallancey, they proved the great correctness, and wonderful exertions, which must have been used in collecting so much information on the ancient language and state of Ireland, &c. &c. &c.

SECT. 16. *Account of Towers, Castles, Monasteries, ancient Buildings, or places remarkable for any Historical event.*

THIS has been fully answered in the Introduction.

SECT.

Sect. 17. *Resident Clergy.*

The Clergy are generally resident in their glebe-houses.

Sect. 18. *Whether the County has been surveyed?*

The county has been surveyed by Captain Taylor; a map was published by subscription. All those printed off are in the hands of the original subscribers. Thanks to the assiduous care of General Vallancey, an accurate copy on a contracted scale is annexed.

Sect. 19. *Weights, Measures, &c.*

All grain, flour, potatoes, stone, coals, &c. &c. are sold by the stone of fourteen pounds; in no instance are they sold by measure.

CHAPTER

CHAPTER VI.

AN ESSAY ON NEAT CATTLE, SHEEP, &c.

SECT. 1. *Neat Cattle.*

MANY gentlemen having of late imported several bulls and cows from England, with the laudable view of improving our native breeds, I hope it may not be departing from the objects of my Survey, if I go at length into descriptions of the different breeds, which have been introduced. In the following remarks, I am assisted by the experience of many years, by communications with many eminent graziers, and by the particular assistance of a gentleman, who has expended much money and labour to acquire the very best information.

The cattle, that appear to lay most claim to the attention of the Irish breeder at present, are the Holderness, the Hereford, the Devon, and the long-horned Leicester.

The *Holderness* surpass all others in size, and come to the stall at an early age; they are of different colours, deep in the chest, broad in the chine, not fine in the shoulders, ribs flat, couples long, very subject to large bellies, (the constant attendants

of flat ribs;) they carry much flesh, with but little real good meat; they produce large quantities of milk, with a bad produce of butter; hides kind and thin; and slow steppers.

The *Herefordshire* in size come next to the Holderness; they are famed for some excellent qualities, but for that they are indebted to the great attention paid to their preparation for the London market by Mr. Wescar of the vale of Aylesbury in Bedfordshire, the most careful feeder, and possessing the best tract of land in England. They handle kindly, feed well *when at an advanced age,* are good in draft, but indifferent milkers, as the Herefordshire dairies are filled with a mixed Shropshire long-horned. They are deep in the breast, very fine in the chine and shoulders, but flat in the sides, and long in the couples, very wide in the hips, but thin in the thighs; they are rather leggy and loose, from whence their deficiency in early maturity, as they are never put to fatten until six years old.

The *Devon.* Fine in the fore-end, thin in the chine, flat in the rib, and long in the couples; colour, a beautiful red; good handlers, but bad milkers; cows very small and handsome, fatten early, but not to any size. Bullocks step fast in draft, but loose in make, and never arrive at much weight; in point of symmetry, and excellence of flesh, much inferior to our native Kerries.

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The *Long-horned* are of every colour, but the most prevailing is brindled, peculiar to them, and supposed to give much hardiness; they are close in their shape, round in the rib, close in the couples, not wide in the hips, which are nearly hid by the broad arching of the ribs; shorter than any other in their legs; beautiful in the head and countenance; the neck small and fine, gradually swelling until it meets the shoulders, which it covers between it and the rib; light in carcass, from the great arching of the ribs, and the depth of the breast, never producing a swag belly; the hind quarter flatted on the outside, and round on the inside; not giving so much milk as the Holderness, but of better quality; fattening at three years old, good in draft, but not of quick step.

Neat Cattle are so much the staple trade of Ireland, that it becomes the great object of the dairy-man, the grazier, the merchant, and the landholder to seek after those kinds best adapted to the several climates, situations, soils, and consumption; to combine the valuable properties of the vast varieties of breeds, and to bring them near one great perfection, should be the object of every sensible breeder. The example set to the world by Mr. Bakewell, though perhaps never to be equalled, should be kept steadily in view; when we reflect, that he acquired much of his great success by bringing from Ireland some of

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our native long-horned, and by crossing any imperfection in any *point* by perfection in the same *point*, it should stimulate our breeders to a like trial.

The beast most likely to give general satisfaction should have a sweet placid countenance; a neat clean horn; head very small; neck very thin at the head, tapering gently, and increasing where it meets the shoulders, so as nearly to cover it; shoulders flat, and thin in the blade; chine not too fine; chest very deep, and full at the breast; ribs rising roundly, and swelling from the chine, broad and thin; couples close; hips not too wide, nearly concealed by the high arching of the rib, and the closeness of the couples; hind-quarters broad and lengthy, narrowing gradually to the tail, which should lie snug between the bones; the quarters on the outside flat, on the inside full, but not extending too low; legs fine and clean in bone, but not long. Cows of the foregoing properties will, in a comparative small compass, weigh from five to six hundred; bullocks from six to seven and a half.

To account for the preference given to the foregoing shape, it is necessary to observe, that all flesh is composed more or less of bunches of muscles and sinews; a large cloddy shoulder requires so strong a collection of them to move it, that no useful flesh will be found on it; a good and bad propensity is easily discoverable, not only in the human, but in the

the brute creation; hence a kindly shaped, easily fatted beast will invariably have a placid, gentle countenance; when the shoulders are thin and fine, they easily move, and are covered with useful flesh; the chine not being too thin gives a depth of breast, and room for springing of the ribs, (the most material part of the shape of every animal;) this furnishes room forwards for the intestines to perform their functions, and gives the lungs room to expand, from being free from the pressure of the intestines, and by the rotundity of shape the intestines are well carried, and not closely packed as in flat-ribbed cattle, which always produce swag bellies, being unsupported by a well arched rib; evenness along the back, from neck to tail, enables the animal to throw an equal quantity of flesh all over; the low situation of the hips makes them easily covered, and carries flesh even over the large outside muscle of the thigh, which is never covered, though never so round under a large square hip: short and close couples are sought for in a horse; they are of equal use in neat cattle, whose propensity to fatten early must greatly depend on the closeness of the rib to the hip, which it should nearly conceal.

The ligament, connecting the upper part of the shoulder with the chine, should be so thin and soft, as to give the shoulder the appearance on the top of being detached from the body; by which means, a small

small loose hollow is perceiveable in a well made beast out of condition, but, when filled with flesh, it will be evenly covered across the top of the shoulders, and all along the chine, forming a thick covering of the best quality from neck to tail, and filling every inequality between the shoulder and side.

I have mentioned, that all flesh is composed of greater or lesser muscles; these are inserted into the pores of the bone; the smaller the bone, the more delicate the muscles to be inserted, and, of consequence, the finer the flesh composed of these delicate muscles. A fair analogy may be drawn from the human frame to elucidate this theory, in which it may be invariably observed, that strong bony men, with brawny muscular limbs, have little or no fat, or even flesh, whilst, on the contrary, small boned men are constantly fat and fleshy.

On a comparative view of the particular merits of the different breeds of English cattle, it will appear that, though each may have its local advantages, they should not, except on the clearest conviction, be the object for pursuit of the Irish breeder; crossing from the most perfect long-horned (originally our native breed) may improve, but a change of breed might greatly endanger the wealth of Ireland, which for the present exists, for the greater part, in its provision trade. The Herefords produce the largest carcases at eight years keep, but their

their advocates reject them as milkers; the Holderness produce a great quantity of thin milk, but no keep can give them beef; the Devons are nothing better than what the mountains of Ireland can produce with any little care; and it must be the conviction of every man, not too fond of innovation, that no cattle in the United kingdoms combine more useful qualities of beef, good milking, and early fattening, than the *carefully bred long-horned native Irish.*

The *Irish beef*, made up by *English merchants* for exportation, is esteemed the best in the known world; from its great excellence it is universally sought after. May I trespass still further on the reader, by giving some account of the kinds that produce it, and the process; I have only his information in view.

The very extensive manner, in which the Irish graziers carry on their business, and the great size of their farms, enable them to have a succession of cattle of every age up to fours, when they are fatted, no grazier thinking of a fifth year; the few aged cattle kept for the plough, and then fattened, form but a small part; these are (most erroneously) too often chosen for being cross-shaped, ugly, and unlike to fatten at an early age; the cattle are kept on different farms, according to their age; the best land is allotted to the four years old, being the year of

of finishing the fattening; the successions rise from fifty to two or three hundred; those, who feed one thousand bullocks, generally purchase their deficiency at the great fair of Ballinasloe. These immense droves of bullocks are generally attended by a solitary herdsman and his boy, who are obliged to keep boundaries. No cottager, no tillage, no population. Hay is never dreamed of as necessary, and, in case of deep snow of long continuance, the bleating bullocks have nothing to resort to, but coarse grass on undrained, unimproved moors, and wet lands, which have scarcely been trodden on during the previous summer. Turnips, rape, or even straw, are never thought of; nay, an extensive grazier would laugh at what he should call your folly, if you doubted the health of his bullocks on his coarse bogs; houses, or covering of any kind are not thought of; yet after all these severe trials of thriftiness, when at four years old, they are put to fatten about the first of May, and in five months are made fit for slaughter. Compare this true picture, my countrymen, with the Hereford, that requires the tenderest attention to arrive at perfection at eight years old, or the Holderness, that never produces a pound of fat meat, and rejoice that you are possessed of so valuable a breed; and, at the same time, reflect on your negligence in not assisting to the utmost

the

the kind gifts of Providence: consider, that fifty acres of your rich land under tillage would give employment to several families; give straw to support your bullocks; tend to the improvement of the soil and subsequent pasturage, and, by the subsisting of your cattle during the winter on fifty acres of straw, they would be made fat on a much less supply of grass the subsequent summer. These premises are so apparent, that it is only to be wondered at, that every grazier does not study his own interest by their adoption.

In the process of slaughtering, particular attention is paid to the quality of the beef; a selection is made of India beef, planters' mess, ship beef, and for the fisheries; the two first are taken from the prime pieces of the best cattle, and rate from eight to ten shillings per hundred higher than the other two. Experience has decided, that the beasts producing most of the India and planters' mess, are of the medium size, viz. from six to seven hundred; it is therefore the grazier's object to stock well with the kinds, that, when sent to slaughter, shall produce the highest price; this they are all well up to, and, did they but try the great improvement in flesh produced by good winter's keep, they would adopt my ideas. Hides, though a considerable article, and which should be preferred of a mellow softness, cannot be attended to in the purchase of beasts

on a large scale. It must be evident, that the beast of six hundred will fatten on half the pasturage required by one of ten; the larger the beast, the greater the bite must be; what grass gains in length, it loses in richness, and in the quality of fattening; a moderately close, very sweet pasture is to be preferred to length of foggy, sour grass. These premises being granted, it is most evident, that the neat stock already in our possession are the best adapted to soil, climate, and Irish treatment, and better answer the wants of the country; nothing is necessary, I will be bold to say, but a selection of the best males, of the shapes I have endeavoured to describe. I am sensible, that no remark of mine will retard the exertions of gentlemen, who may wish to speculate in the improvement of cattle. I have gone into great length on this subject, from an anxious desire to induce my countrymen to *hold fast that which is good.*

Sect. 2. *Sheep.*

Comparative value of Brood Ewes of different kinds.

Supposing five hundred acres of sheep-walk land, rented at twenty shillings per acre, the breeding stock it will maintain, without the assistance of vegetables

tables and red clover, cannot be well estimated at more than two to the acre, viz. one thousand sheep.

Sheep of Irish breed.

Ewes in lamb - -	281
One year old - -	253
Two years old - -	246
Three years old - -	120
Culled ewes - - -	100
	1000

Sold out.

	£.	s.	d.	£.	s.	d.
Wool at twenty shillings - -				375	0	0
One hundred and thirty, three years old, wethers at forty shillings -				260	0	0
One hundred culled ewes at twenty shillings - - -				100	0	0
				735	0	0
Rent - - - -	500	0	0			
Tithe wool of one thousand sheep, at four shillings per for tenth fleece - - -	20	0	0			
Tithe of two hundred and sixty-one lambs - - -	5	4	0			
				525	4	0
To bear all casualties, leaves a profit of -				209	16	0

After crosses of the improved Leicester, the stock will be,

Brood ewes - - -	343
One year old - - -	333
Two years old - - -	162
Culled ewes - - -	162
	1000

	£.	s.	d.
Wool at twenty shillings - -	375	0	0
Two years old, one hundred and sixty-two at forty shillings - - -	324	0	0
Culled ewes, one hundred and sixty-two at thirty shillings - - -	243	0	0
	942	0	0

After further and closer crossing with the Leicester, the breed will be,

Brood ewes - - -	500
One year old wethers - -	250
Culled ewes - - -	250
	1000

	£.	s.	d.
Wool at twenty shillings - - -	375	0	0
One year old wethers, two hundred and fifty at thirty shillings per - -	375	0	0
Culled ewes, two hundred and fifty at thirty shillings - - - -	375	0	0
	1125	0	0
Rent and tithe - - - -	525	4	0
	599	16	0

Here

Here we have an estimate of the compararive value. The profit of selling out the improved breed of sheep, in preference to the old Irish stock, if parted at two years old, will be 207*l.* and, if parted at one year old, 390*l.* which leaves a profit for early maturities of 183*l.*; the whole profit being 600*l.* on the early ripe Leicester, whilst the whole profit of the old Irish is but 210*l.*

In the foregoing calculation I have charged wool rather high, but it is the same in every case; I have set down the sale price of the old Irish sheep at the highest, and the prices of the improved Leicester at lower rates than they usually bring. Much outcry has been raised by the consumers of mutton at the over-fatness of the Leicester sheep; their fineness of bone, smallness of muscle, and neatness of shape, give them the propensity of putting their fat over their ribs, instead of mixing with their gut, and producing swag bellies; but if a double proportion of Leicester sheep was put on the same acre of ground as of the old Irish, they would take a longer time to fatten, and might, after a few years, be found to have gravy sufficient, and toughness enough to please the palate of the nicest epicure. Whilst gentlemen are every day anxious to raise their rents to the utmost stretch, the tenant may be indulged with stocking his ground to the best advantage. It may be perceived, that I have avoided every thing, that

that could advance the increased profit of the otherwise I would be fair in charging, that the same acre, which supports two Irish, would fatten three, indeed I might say four, of the Leicester.

As so ample a description is given, in the essay on black cattle, of the formation of animals, and their property to fatten, and as muscles, bones, and flesh bear so near a similitude in the formation of all animals, I shall not tire my reader's patience by carrying him over the same ground again; of one thing I am convinced, that a shapely sire in every case is most absolutely necessary, and that, if the mountain sheep-breeder crossed with the Leicester, he would acquire thriftiness and shape, and put much in his pocket by one cross. I shall take advantage of Mr. Fishbourne having some sheep lands in this county, to say a few words of his uncommon exertions for the improvement of sheep stock; though his father and he have been for forty years crossing their kinds, and though he was considered to have some of the best in Ireland, such was the spirit of improvement, which this gentleman possessed, that he went to Honeyburn, the nephew of Bakewell, and in one year hired from him two males at seven hundred guineas for the season, and bought from him twenty ewes, for which he paid four hundred guineas, and he continues hiring yearly a sheep, at from three to four hundred guineas; these very

very great exertions are not unapproved by the sheep-breeders of several counties, who annually attend his show of sheep, and hire from thirty to forty at good prices.

Comparative value between two hundred and fifty acres of the same quality as the foregoing five hundred, but treated as underneath.

	Acres.
1 Alternate pasture and meadow -	30
2 Ditto - - - -	30
3 Oats or wheat in clover or other lay -	30
4 Vegetables - - - -	30
5 Barley - - - -	30
6 Clover - - - -	30
7 Ditto - - - -	30
8 Out-pasture, cottagers' gardens, &c. -	40
	250

Enclosures must be made perfect.

In No. 1, five hundred brood-sheep of the best kinds are put in at November, selected according to the foregoing plan. Here the thirty acres under vegetables are to be drawn, and to subsist the sheep with the addition of some hay until the 20th of April; at which time the sixty acres of first and second clover will be equal to their summer keep, until the hay from the thirty acres manured by the sheep shall be off; then part of them may be turned

to

to after-grass. When the farmer has his ground in this course, his products will be,

	£.	s.	d.
Profits of five hundred sheep on the former scale, 562*l.* say - - -	500	0	0
Thirty acres of oats in grass or clover lay, fifteen barrels an acre, at ten shillings a barrel - - - -	225	0	0
Thirty acres of barley, fifteen barrels an acre, at sixteen shillings a barrel -	360	0	0
Produce of the two hundred and fifty acres	1085	0	0
E. Contra.			
Interest of 1000*l.* capital, (the least there ought to be) - - - -	60	0	0
Rent - - - - -	250	0	0
Tithe of sheep and lamb - -	12	12	0
Mowing and making thirty acres of meadow, at twelve shillings per acre - -	18	0	0
Reaping, harvesting, &c. thirty acres of oats, at fifteen shillings per acre -	22	10	0
Reaping, harvesting, &c. thirty acres of barley, at fifteen shillings per acre -	22	10	0
Manuring thirty acres of vegetable fallow, in addition to the folding of five hundred clover sheep for two months -	90	0	0
Tithe of thirty acres of oats, at four shillings per acre - - -	6	0	0
Carried forward - -	481	12	0

Tithe

	£.	s.	d.
Carried forward - -	481	12	0
Tithe of barley, at eight shillings per acre	12	0	0
Tithe of hay, at five shillings per acre -	7	10	0
Stewardship - - - -	50	0	0
Clover-seed, if purchased - -	30	0	0
County and parish charges - -	15	0	0
Seed-oats for thirty acres, fourteen stone per acre, at fifteen shillings a barrel -	15	0	0
Seed-barley for thirty acres, ten stone per acre - - - - -	15	0	0
Profit - - - - - -	458	18	0
	1085	0	0

Note.—In order to avoid too much complexity in the account, thirty acres of the alternate meadow and pasture, and the forty acres of out-land, part cottagers' gardens, and part under grazing-stock, are not taken into credit; they are left together with the thirty acres of meadow to supply all contingencies, the necessary cultivation of the ground, &c. &c. The profits of five hundred acres under sheep-stock of the Irish breed, as stated in a foregoing table, are 209*l.* 16*s.*; the profits of five hundred acres, treated as above, are 917*l.* 16*s.*

The farmer will have an opportunity, in the foregoing system, of changing and converting any of his tillage divisions, to replace a grass and meadow division, which he may think well to bring into tillage.

Nothing can more clearly shew the great advantages, which will attend the introduction of red clover and vegetables, and of sheep-stock into the tillage system, and will clearly demonstrate the correctness of a reply made several years since to a question put by one of the most enlightened men of this or any other country, who inquired, whether sheep or tillage was most beneficial to individuals or to the state; he was replied to, that one could not long exist without the other.

For the tithe-man's information, I must observe, that five hundred acres of sheep-walk ground, being stocked with half sheep, and half black cattle, at the rates heretofore noted, will produce him but 12*l.* 10*s.* being the tithe for fleece and lamb of the sheep-stock of five hundred; whereas his tithe, according to the foregoing calculation, on the tillage of twice two hundred and fifty acres, conducted as before, would be 76*l.* creating a yearly loss to him of 63*l.* 10*s.* in case he should play the fool so deeply, as to force all or any of his parishioners to resort to stock for protection.

He will also note, that he gets credit in all these statements for the tithe of hay, though it is principally expended in the support of sheep-stock, for which he receives a double tithe, and in the maintenance of the cattle necessary to till the ground,

to

to produce corn to give him the right of demanding any tithe.

Working cattle in the foregoing statements are not taken into account, supposing that horned cattle will be used, which, instead of loss, will leave a profit, besides their work, for their grass, hay, and vegetables.

The comparative value between an Irish two years old wether, fat from his infancy, and a Leicester bought in poor two months before, both exhibited by Mr. Garnet at the Farming Society show.

	Irish Sheep.	*Leicester.*
	Feet. Inches.	Feet. Inches.
Height -	3 2	2 3
	lbs.	lbs.
Live weight -	245	175
Pelt - -	24	19
Blood - -	10	8
Head and pluck -	14	10¼
Belly-fat -	21	10
Guts - -	24	12¼
Carcase -	128½	124
Dung and waste -	39	8

Here it appears, that the four quarters of the Irish sheep are in this case (and I have found it so in numberless trials,) not a pound a quarter under or over

the living weight, the rest being guts, dirt, and offal.

The Leicester sheep, small in bulk, and of easy keeping, produce, instead of one-half, as is the case with the Irish, nearly three-fourths of food for man, and within four pounds of the over-grown, cross-shaped monster, that was opposed to it. Mr. Garnet was a most violent supporter of the fine, large, lofty, herring-backed, big-bellied, strong-boned, thick-necked, jolten-headed Irish sheep; he was immediately converted. Kind reader, if you have ever been at the great fair of Ballinasloe, you must have seen several *rams* (sheep I cannot call them) exposed to sale, and their merits, pedigrees, &c. most violently cried up.

By close-breeding, generally termed in-and-in-crossing, with sires of the same blood upon ewes of any breed, by the first cross the lamb acquires fifty parts out of one hundred of the whole blood; by the second cross on the produce, the lamb acquires eighty-five parts; by the third cross, ninety-seven and a half; and by the fourth cross, the whole blood, shape, qualities, wool, &c. are obtained.

A new selection of males, and pairing them properly with females, was the only art made use of by the justly celebrated Bakewell, who went further in the improvement of stock than all his predecessors put together; no man, that has three hundred ewes

to

to put to tup, but should divide them into hundreds, according to any imperfections he may wish amended; in each one hundred he should then acquire a male for each, possessing in an eminent degree perfection in the points, where the hundred females he may be applied to are deficient. With this attention, he will shortly find all his stock acquire perfection.

In the calculation of the value between one kind of sheep and another, I may not have sufficiently explained; for my reader's fuller information, I beg to add, that ewes of the Irish breed, from their unthriftiness, are never turned to tup until two years and a half old, whilst the improved Leicester have at that age yielded a crop of lamb. I shall close this subject with the best description I have been able to acquire of the most useful male sheep.

Head, fine, small, with much gentleness of countenance, clear of wool or hair; nostrils wide; eyes lively; ears thin, small, and not drooped.

Neck, at setting on of the head small; thin at back of the head and graceful, free from all wrinkled superfluous pelt; collar full from breast, tapering gradually to junction of head and neck.

Breast, broad, well forward, and very fleshy at setting on of shoulder, not too much let down.

Shoulders, broad and full, chine sunk between them at top; they must join so evenly to the collar forward,

forward, and chine and ribs backward, as not to leave an appearance of hollow, but to fill the fore-flank well.

Back, broad, flat, and straight; the chine imperceptible; the whole covered equally with flesh.

Ribs, to arch out boldly from the chine, gradually one over another, last rather highest, to meet evenly with the hips, and so conceal and cover the flank; hips not too projecting, so as to be conspicuous; in an easy segment of circle from tail to point of shoulder.

Tail, tapering to a point, lightly covered with fine wool.

Quarters, flat outside, full within, and well let down.

Belly, well up from the breast, completely supported by the arching of the rib.

Legs, upright, with a fine, clean, small, lengthy shank-bone.

Hoofs, small, compact, sound, and durable, of a bright tortoise-shell colour.

Pelt, fine, thin, and light; the natural produce will be a kind, mellow, fine fleece.

One hundred ewes are usually put to one tup. In general they are put too early, by which the tup exhausts himself with some two or three, that happen to be in blossom before the bulk of the rest. By retarding the time of putting to the ewe for ten days,

days, so many claimants will be on him, that he will scarcely tup the same ewe a second time. The best time for ewes to bring forth is on the 20th of March. They go with lamb one hundred and forty-seven days; this brings the day for putting to tup on the 13th of October. A spare tup should be fitted as a teazer, by tying a piece of canvas round his belly, fastened with straps over the shoulders and loins. On the 1st of October, one of these should be put to each hundred, which will prepare them for the intended tup. He should be in a small enclosure, and according as the ewes appeared to blossom, (which may be known by their gathering about the teazer,) they should be drawn and put to the tup; the middle of his belly is to be every day raddled, and, as he tups each ewe, she is to be taken from him, put into a close away from the teazer, and a fresh supply brought to the tup, and so on until the entire one hundred are gone through; then the tup is to be turned to the entire, and the teazer withdrawn. With this management, one tup will be equal to several hundred ewes: an instance within my recollection occurred in the neighbourhood of the Curragh several years since; a sheep-breeder of eminence from some distance sent two tups in a cart intended for a gentleman in the county of Dublin. They were halted at the house of Mr. C———, who had large flocks of sheep

sheep on the Curragh. The tups were stowed carefully in a paddock, and the driver, after an ample potation, being stowed in bed, Mr. C——— had his sheep collected on his front of the Curragh, and put into the paddock with the tups, where they remained but a few hours, and were driven back to pasture before the driver got up. The produce of this scandalous transaction was three hundred lambs dropped for the knavish entertainer. This will not appear extraordinary to any observer, who will remark a tup when first put in among ewes; if there be but one in blossom, he will tup her six, eight, nay even ten times in a minute.

The moon extends its planetary influence to many parts of created matter; that it extends to the generative faculties, I am fully convinced from long and many observations.

The Irish peasant will not send his sow to the boar, until the moon is at least ten days old. He will tell you, he can only have a pig for each day the moon is old. In the dropping of lambs, for several days they will run males, and for other days females; thence I conclude, that the males are begotten in the increase of the moon, and the females in the decrease. I pray your reverence to keep your countenance. If, in consequence of perusing the above, you should be made the father of a fine, healthy boy, instead of the number of girls you

you have already had, you will become a convert to the influence of the moon. In another extraordinary instance the influence of this planet has been repeatedly proved; an old fat cow, killed in the increase of it, from toughness will not be eatable, whilst one of equal age and quality, in the decrease, shall eat as tender as a heifer.

The Curragh, by Taylor's map, contains three thousand acres; by an account taken of the sheep-stock, they amount to sixty thousand. What a turf it must be to bear twenty sheep an acre? The commonage is stocked by a prescriptive proportion attached to the adjacent farms; every sheep-owner has a particular raddled mark; the shepherds' dogs are so trained that, if a sheep, with a strange mark, comes on his master's front, the dog will single him out, and worry him off.

The above is the only case, where a cur-dog can be useful; every cabin has a dog, which all day bites the heels of every passing horse, and at night, when he might be some protection, he sleeps by the cabin-fire; during the season of ewes lambing, they are perpetually annoyed by these curs, and to sportsmen all acts for the preservation of game are but trifling, whilst a cottager's wife travels after her husband with one, or sometimes two of these at her heels, by which every leveret and young partridge are destroyed; the making the dog-

tax general would make it productive, and be of great utility.

Sect. 3. *Swine.*

From the yearly increasing demands for Irish pork and bacon, the profits to be made, their easy keep, and their being within the reach of the poorest wretch with a hovel on a common, their numbers are incalculable; no cottager is seen without one, and in country parts, few but have two at the least: they are generally bought out of kishes at fairs, when weaned at two months old; they run at large on the public roads, and by their own shifts on grass, and the cottagers' waste potatoes, they are brought on to two years old, when they are sold fat to the buyers of Ross, Waterford, &c. &c. The Irish breed of pigs are in general white, very long, tall, narrow-backed, thick-legged, heavy-eared, and a most unsightly, unthrifty looking animal; therefore they are not fit for slaughter until two years old, and several not until three, when they are sometimes run up to twenty-four stones, but the general average is fourteen.

Many gentlemen have of late improved their breed of swine, principally by crosses from the new Leicester, or Bakewell's selection: a kind shape, neatness

neatness of form, breadth of back, fineness of bone, and early propensity to fatten, should be the object of every person wishing their improvement. It will be a work of some time, to prevail on the cottager to exchange his tall, narrow-back, for a small low one, though the small one of thrifty shape, at one year, shall weigh as much as the long fellow, at two years old, upon double the keep; of course four can be sold instead of one, and four times the quantity of money brought into Ireland, and circulated chiefly among the lower orders.

These are objects surely well worthy the cherishing protection of the Farming Society, of every society, and of every individual, who loves his country.

What I have already said on flesh, bone, and sinew, holds good in every animal. A pig should have a gentle countenance and small head; ears short, thin, and erect; carcase broad and flatted over; quarters broad, and well let down; tail very small; legs with fine bone and upright; the entire carcase from head to tail, back, and sides in easy segments of circles, so that neither shoulders, flank, nor hips can be discernible. One of such shape will weigh double an Irish pig of same girt.

I noted the slaughtering of a *little* pig, fifteen months old, the property of Mr. Richardson of Athy, as underneath.

	Feet.	Inches.
Height - - - -	2	1
Length of round of side from head to tail	3	2
	St.	lb.
Live weight - - - -	19	7
Dead weight - - - -	17	10
Offal and waste - - -	1	11

A sow is seldom put to the male, until she has weaned her young; this takes up at least ten weeks, whereas she would take the male on the ninth day; the not making use of this opportunity creates much loss of time.

The farmers of the county of Limerick are mostly in the dairy system; they have of late years got much into potatoe culture, with which they occupy all their fallow; a piece of red ground without a crop is not to be seen; they rear many pigs on grass and buttermilk; at eighteen months they are put to potatoes; it is calculated, that an acre of potatoes produces fifteen tons, and that every ton of potatoes will yield one hundred of pork, which, at the average price of forty shillings, will pay thirty pounds for the acre of potatoes, and, deducting ten pounds for seed and cultivation, the Limerick farmer makes twenty pounds per acre of his fallow crop.

SECT.

Sect. 4. *The Horse.*

Before I go into particulars, I shall take the liberty to copy the beautiful description of him in the Book of Job, chap. xxxix.

"Hast thou given the horse strength? Hast thou cloathed his neck with thunder?

"The glory of his nostrils is terrible.

"He paweth in the valley, and rejoiceth in his strength: he goeth out to meet the armed men.

"He mocketh at fear, and is not affrighted, neither turneth he back from the sword.

"The quiver rattleth against him, the glittering spear and the shield.

"He swalloweth the ground with fierceness and rage; neither believeth he, that it is the sound of the trumpet.

"He saith among the trumpets ha! ha! and smelleth the battle afar off, the thunder of the captains and the shouting."

The lower classes of farmers have brood-mares as part of their tillage stock. They never consider shape, colour, or form in a sire, but lowness of price, (three half-crowns, or a barrel of oats being the usual payment.) No wonder that the race is degenerated; few are equal to more than six hundred weight.

Another

Another great cause for horses not improving is, the eager desire of crossing with racers. A gentleman has a half-bred mare; how many wonderful long chases has she carried him! how many high walls has she topped!

He must have some of her breed, and sends her to a blooded horse; one of twenty so crossed ever succeeds. They run awry in many points, are weakly pasterned, and, in short, disappoint the fond hopes of the owner. Breeds in horses should be kept distinct; one cross *may* do, but a second always fails. The breeders of hounds, spaniels, and pointers know this well; the first cross between a fox-hound and a beagle is sure to produce the most useful kind of hound, but he should never be bred from: thus it is with setters and pointers; I have seen an excellent gun-dog out of a mastiff and pointer.

If draft horses are wished for, breed from the most shapely, light-stepping of the draft kind; those, who breed cattle for the turf, take particular care in their selection. To breed horses for the army, carriages, road, or general service, it can best be done by crossing a large, roomy, thorough-bred draft mare with a good thorough-bred horse; the produce will be excellent for any use, but by no means breed from a mare got from such a cross; if more must be bred, look again for the thorough-bred draft mare.

The

The native breed of Ireland are about fourteen hands and an inch in height; thick and round in the carcase; close in the couples; short-backed; haunches well under; short-legged; close in the pastern; shoulders flat, to lie well back; withers high; neck rising boldly out of the shoulders, tapering upwards to meet a small head; a light ear, chearful eye, and pleasant countenance, *without which no animal can be shapely.*

For roadsters, and for general use, the world cannot produce better animals; they are now and then to be met with, and are most highly prized.

I have already mentioned the great advantage it would be, if the committee of the Farming Society gave encouragement to the importing and breeding the best kinds of draft stallions, to be stationed all over the kingdom; I consider that, and giving premiums for such, as the Society may approve, to be let out at moderate prices, as one great step to furnish a better breed.

The next step is, to get rid of the barrel of oats stallions, which swarm in every fair; this can be done by charging every Irish-bred horse with a licence of ten guineas; every horse approved by, or recommended by any deputations from the Farming Society in the different counties, to be exempt from the tax; this would reduce the number of *stallions*, as they are called, and encourage the importing

and

and propagation of more useful males, which could not be leaped at less than a guinea, and any man, who would hesitate to pay that, should not breed.

CHAPTER VII.

An Essay on the means of converting Grass-lands into Tillage.

Sackville-street,
November 26th, 1801.

SIR,

THE Board of Agriculture have perused with satisfaction the Essay, with which you have been pleased to favour them, on the important subject recommended to their consideration by the committee of the House of Lords, and return you their thanks for the same.

As a further mark of their approbation, they have unanimously voted, that a piece of plate shall be presented to you.

You will be pleased, therefore, to acquaint me, what particular article will be the most agreeable to you, and in what manner it may, when finished, be transmitted to you with safety.

I am, Sir,

Your most obedient Servant,

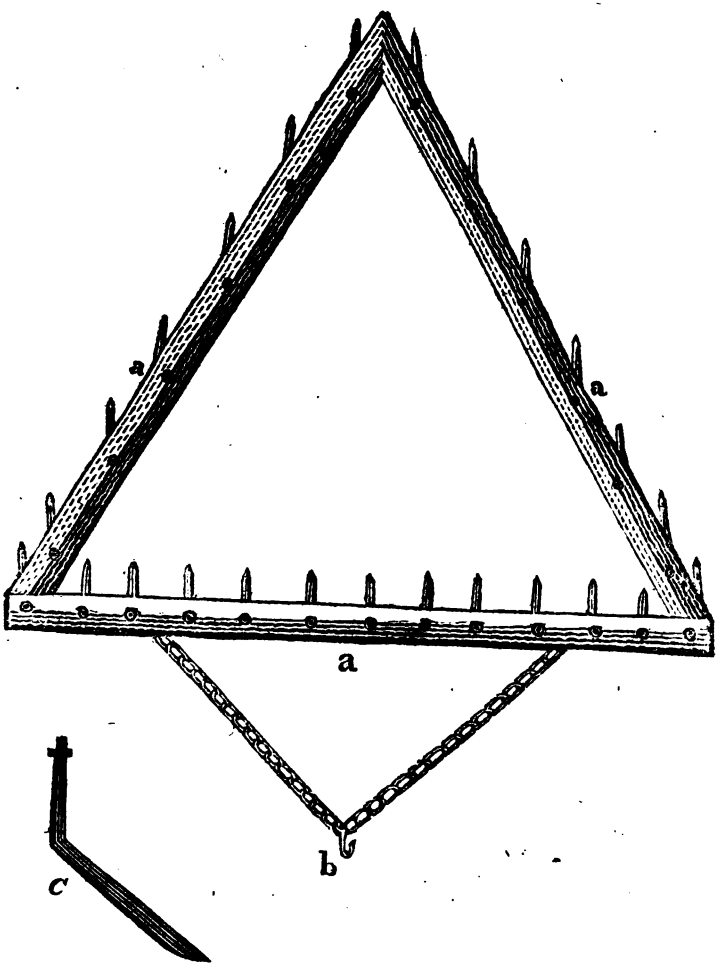
CARRINGTON, *President.*

Thomas James Rawson, Esq.
Cardenton, Athy.

In

In the demesnes of many noblemen and gentlemen, and in the feeding pastures of the rich slothful graziers, are vast tracts of land grown old in grass, overrun with moss, and hide bound, which would be highly improved by renewing the surface, without continuing them in tillage; from repeated trials, I have found an expeditious and cheap mode to be with a turnwrist plough; break up the grass land, stirring to a good depth, laying the grass completely under. If a turnwrist plough be not at hand, it may be executed by any common plough, going round the field or piece intended to be broken up, turning the earth evenly one after another, until the space in the middle be too small to admit of the plough's turning; this is to be dug up; on that fresh turned soil wheat, only in light loams, and oats in strong clays may be harrowed in, the soil made perfectly smooth, and, if it is intended to lay down to grass immediately, of ray-grass half a barrel, of red and white clover seed five pounds; each should be immediately sowed. In less than six months, the land will yield with the trifling labour of one ploughing and harrowing an immense crop; the surface-turf, which has been turned under, will become a high improvement, and great manure for the upper new grass surface, which will for every use be one-third better than the old. To expedite and improve the foregoing work, I have constructed a harrow-pin, differ-

ing from any other hitherto in use to my knowledge; and from the ease, with which it is worked, and its surprising effects, I trust it will, on trial, be found to be of very great use in reducing soddy tough fallows. The neck of this pin in the wood is five inches, fastened at the top by a nut; the blade of the pin is twelve inches long, made pretty strong in the back, an inch and a half broad, and the edge sharp and well steeled; the angle of the pin to be more or less obtuse, according to the depth it is wished to cut, six inches will be found sufficient; a small plate, with two nail-holes, is fitted to the square of each pin, and, when the pin is placed, the iron plate is nailed to the wood, which will keep the pin steady. In a five-bar break, of five and a half feet square, twenty-five of these pins are inserted, with their edges placed with care in the line of draft, which is to be from the second bar; no two pins are to follow; if well placed, each stroke of the slicer will make twenty-five cuts, at about two inches and a half apart, and one stroke lengthways, and one across, will leave the soil sliced in small pieces, well fitted to receive the seed, which will then be most readily covered in by small harrows, and the whole laid smooth. It may appear, without trial, that the slicer will not sink without being weight; the contrary is the fact; before it is drawn one yard, the pins enter the soil, and continue to cut through it without

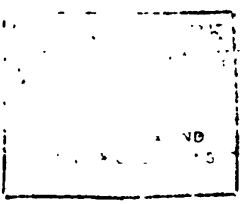


The shape, here described, has been found the best for the slicing-harrow.

a, a, a, the three bars, which compose the frame.

b, the point of draft.

c, the harrow-pin.



without displacing the turf, which has been turned under; it is so easily drawn, that I usually work it with three mules abreast, and it is useful in scarifying mossed, hide-bound land.

I shall not take up the time of the honourable Board, by expatiating on the foregoing plan of converting large portions of grass-lands into tillage; if it has any merit, they will readily see it. I am now ploughing twenty acres of lay for oats and grass. Should it be the wish of any landholder to break up his lay with potatoes, the turf should be ploughed into beds of seven feet wide, cut with the slicing harrow; sets of potatoes to be dibbled in one foot apart, the dibble to be of the length of a spade-handle, with a step for the foot to press it down, and shod with iron at the bottom; in the holes made by the dibble a set is dropped, and the surface made smooth with light harrows; with a furrow-cutter stir the earth one foot square in the furrows, and cover the beds by shoveling; nothing more than weeding will be necessary, when the potatoe crop is taken up; the land will be in excellent condition for wheat or winter barley, if it be strong clay, or to lie over the winter for spring barley, if it be loam; the portion of seeds, above laid down, may be sown in April with either crop, and the land turned out to grass, but, if with the winter crop, great care must be taken,

that the seeds are well covered by rolling and bush-harrowing, otherwise nine-tenths will perish.

The furrow-cutter is a plough without boards, with a high cross; the beam, which must be fortified with iron the whole length, must stand in the centre of the handles, and exactly in a horizontal line over the sole, to which it must be attached, and strengthened by an iron spindle, which must be directed from behind the coulter to the centre of the sole. With this instrument all drill husbandry, where hoeing is necessary, will be much improved, as it not only hoes without much disturbing it, but stirs the under-soil, and prepares it for the roots of the adjacent plants; in drilled potatoe culture, which can never be too generally practised, in rape and cabbage, it is invaluable; I have had last season my drilled potatoes as large and as prolific as ever, which must be attributed, under Providence, to the cultivation of the soil. I have used the furrow-cutter with great effect on several acres of the strongest furze; the coulter is made very sharp, and well steeled; I put six bullocks to it, with ease they cut through roots of the largest size. A plough with four bullocks fallowed, and turned over the soil, and cut roots, which were hastily taken off by the cottagers, together with upper twigs, which had been previously bound; I then covered fourteen acres with a compost of marle, gravel, and lime, of which I shall

I shall speak hereafter; they bore two good crops of potatoes; third winter barley; fourth, spring barley, with which red clover is sown intended to break up; with this furrow-cutter and shovels, I made drains and fences to any depth through the hardest gravel. If it be intended to improve the soil by continuing it in tillage for a further short space, as soon as the crop of oats or barley be off, plough up to lie winter fallow, and in the ensuing summer prepare for vegetables; in the light loam sow turnips, which should be in drills, and the intervals hard, and on the clay soil plant rape, cabbage, and borecole on ridges three feet broad; for rape, the seed should be sowed in the nursery bed about the 25th of April; for cabbage, the large Scotch part in August, and part in the beginning of February; and for borecole, to expect a full crop, the seed should be sowed in August. If lime, chalk, marle, limestone gravel, or any compost manures are to be used, plough in and mince intimately with the soil; if none is to be used, lay the fallow in three feet ridges, harrow well, draw out six tons per acre, if well rotted, of farm-yard dung, and lay it in small heaps at convenient distances; with a strong plough split each ridge; lay the plants, when fit for planting, at eighteen inches apart against the upright side of the furrow; girls with small baskets will lay a handful of dung on the root of each, and men with eighteen inches hoes will return the earth cast out by the

the plough, which will cover the dung and root; in that state the land may lie for a month, then introduce the furrow-cutting plough with two or three horses a length; three strokes will prepare the earth for being hoed up to the plants, which is done by a plough with double-mould boards at one stroke; by this treatment, on the strongest soils, with only six tons of dung per acre, a certain crop is secured in the driest seasons, and the land highly prepared for a future crop. I have at this moment, January 22d, twenty acres of rape in the highest perfection, cultivated as above. In the heat of last summer, which destroyed almost every other vegetable, after I had dressed and improved most of my lands, I devoted twelve acres of dry strong clay to vegetables; without corn for six years, my course of crops was, first, potatoes in drills of three feet, dunged; second, rape and cabbages; third, turnips; fourth, drilled potatoes, dunged; fifth, rape and cabbage; sixth, turnips; seventh, lay it out to grass without corn.

In the drilled potatoe crop, after they were landed up and finished, I again introduced the furrow-cutter, and stirred the bottom of the furrow, on which I laid lengthways rape plants, the seed of which was sowed the 20th of May; the soil stirred was so shallow, I was obliged to cover the root of each plant, as it lay, with a small hand-hoe; though the soil was almost taken away, and no manure added,

added, the rape plants soon held up their heads, the potatoe crop was taken up by the pronged forks, which would otherwise be taken out with plough and harrow, and this operation well landed the rape. Four acres, treated in this way, kept the ensuing March and April two hundred ewes and lambs in a small enclosure for two months; in the same situation, a cabbage or turnip would not have existed. Rape will be found the best vegetable for all soils; two acres, which I put into a field with grass seeds at four feet rows, and left to seed for the experiment, produced twenty-four barrels of seed, though more than half was destroyed by birds; to such perfection were the above twelve acres improved, that, though on the summit of a hill, one acre is worth two of any of the adjoining well dressed land. I cultivated potatoes in drills, by forming the previous broken ground into three feet ridges; put a row of dung in the centre of six; open the furrows a second time; with a plough put a single row of potatoes in the centre of each; cover with the dung, by re-ploughing the ridge to its former shape; harrow well, when the potatoe plants are up three inches; introduce the furrow-cutter; prepare the earth, and mould up the potatoes as high as possible, drawing up the earth. After repeated ploughing and earthing, at the finishing, close to the tops with eighteen inches hoes; when the crop is to be taken up, with a two-horse

plough

plough draw the earth from each side the drill or ridge; mark out the ground to its length, staking out two perches for the work of each picker; place a basket between two; with a wide plough and four bullocks split the first drill, then go to the fifth, and do the same; by this mode, the plough and pickers never interfere, and so cast outwards the five drills in ten bouts of the plough, forming them into one shed; a smart light harrow, of six light bars, with a crank and chain in the centre, to enable the driver to lap one on the other, when harrowing the first inside drill, will follow the plough; so soon as the potatoes in the track of the plough each bout are picked up, the harrow will show all the rest, and the harrow-driver must fill the track made up by the plough, and the potatoes in the next bout will be fanned out on a smooth surface. Two carts are constantly to ply, to carry away the potatoes from the baskets; they should never be put together in large quantities, as they are subject to heat, and the seed from heated potatoes will produce curled stalks the ensuing season; if the work is regularly carried on, as here laid down, no confusion will occur; the potatoes will be taken up much cleaner than by any other mode, and an acre and a half will be taken up in a day, producing eighty barrels, at twenty stones per barrel. By the number of ploughings and harrowings, necessary for the potatoe crop, the ground will be reduced

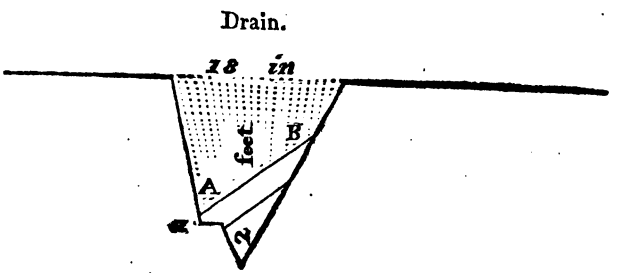
reduced to garden fineness, and be in the highest state for receiving any other crop. The scarcity of seed potatoes last season induced me to cut off about a tenth of all that were used in my house, as they were brought to the kitchen, at the end where the eyes are in a cluster, and then to subdivide the eyes, which produced three, four, or five sets from each potatoe; no matter how small, if the eye be entire. I planted three sets, and had every increase I could wish; I should prefer them to the small potatoes sliced, which are commonly used; no injury is done to the remainder of the potatoe, provided the cut be made immediately before boiling. I have already saved seed for two acres of drills, without either expence or trouble. Many of my neighbours are now saving their potatoe seed in the same mode. From the very great advantages to be derived from the general cultivation of potatoes, I have been perhaps too prolix in giving the most ample description in my power of a subject near my heart, which I have devoted years to the practice of.

To return to my subject, the course of crops I recommend to those, who wish to keep on tillage for these years for further improvement, are as before; first, oats and barley on one earth; second, turnips or rape, cabbage or borecole; third, lay out to grass with barley, and the foregoing proportion of seeds, which I have found to answer in all soils; the ray-grass is

the earliest grass in April, and May; red clover will assist; and in June, July, and the rest of summer, that best of fallowing grasses, white clover, will take possession of the whole surface. It is by no means adviseable to mow land the first year after being turned out or manured; the seeds and grass run up to great strength, and become a very exhausting crop; graze with sheep the first year, and mow the second without injury; after mowing, if a slight top-dressing with compost manure be given, it will be a great assistant. I beg to introduce here a mode of sowing corn I have practised with great success; viz. after clover lay, or any poor, worn fallow for wheat or barley has been ploughed into seven feet beds, in the furrows I lay twenty-five tons of compost manure, or twenty barrels of quicklime; with the furrow-cutter, at three bouts, I mix the under-soil and lime, &c. together, and cut the furrows one foot wide, and nine inches deep; then harrow the whole field smooth, sow on the beds, and cover with shovels. Six men will do an acre; their hire will be saved in the seed, as no more is required in this way, than if dibbled in; no grain is lost, displaced, or uncovered, and the poorest and most exhausted soil will produce a good crop. If wheat is sowed, after the whole is finished, I make one cut in the bottom of the furrow, and leave it until April; by the preparation, and the soil which will moulder

moulder down from the brows of the beds, enough will be got to give a top-dressing with shovels, which will give strength and stability to the plants. In three days I have observed new roots, six inches long, to shoot out into the top-dressing; the absolute necessity of top-dressing, or rolling wheat, may be perceived by pulling up a stem when ripe; it will be found, that a tier of roots has been produced by the plant originally on the surface; by the earth subsiding in the winter, they will stand half an inch above it; through want of nourishment they have perished, and curled backwards to the parched stem; the pressing the plant to the earth by a roller enables these roots to struggle for a situation, but top-dressing secures them plenty of food. Without previous and sufficient draining, no wet land should be ploughed; after draining, the land should be left three years to subside, and to prove that the operation has been complete; if it be then desired to plough, it should be with a determination to improve by cultivation, and not to exhaust by cropping. After the surface has been made fine, by burning the roots of rushes and other aquatics, and that the soil is in fine tilth, I should recommend to sow each acre with a barrel of ray-grass; and first, of rape-seed in May, June, or July without other crop; in October sheep may be speedily fatted, or, if left until spring, it will form a delicious repast for

ewes and lambs. I have drained many hundred acres; the mode I have practised is, to choose out the best situations for leading drains to carry the water off the land at least three feet deep, which can be cheaply and securely filled with faggots of briars, or loppings of hedges: into these conducting drains I have made a number of small drains eighteen inches wide, and two feet deep; the surface turf, which for this operation must be strong, is laid aside carefully, and the drain made thus— (see the opposite sketch.) At a, is a step or rest made on the side of the drain, within six inches of the bottom; A. B. is the surface-turf, with the grass side under, one end on the step, and the other leaned obliquely against the opposite side; fill over the turf with what was taken out of the drain, and nothing can injure. If the ground be pierced with an earth-borer, or with an iron bar to a good depth, at every seven yards, as Mr. Elkington directs, it will greatly assist the number of drains; except the under-stratum be firm to bear the end of the turf, this drain cannot be made, it will be then necessary to resort to faggots, small stones, &c. I have made several thousand perches of these drains; the whole expence of digging and filling is four pence per perch of seven yards. Instead of breaking up with the plough, I prefer giving a good thick surface-dressing of marly gravel, with which all my lands abound;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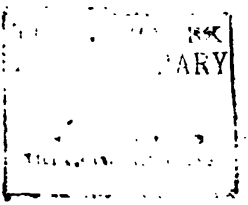
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abound; I widen and sink the dikes of my fences; to every cart-load of gravel I add one of quick-lime; I mix with plough and harrow, frequently stirring for a year; the compost is then for grass or corn superior to distillers' dung. By this practice land will be drained, fences improved, the manure easily laid out on the land, and I assert, that quick-lime will convert every understratum, except running sand, into manure. I have now on my different farms quantities of the above compost, sufficient to manure two hundred acres, and am preparing large tracts for potatoes, which grow most abundantly on it; in the summer of 1798, I had two potatoe beds, one hundred perches long, planted with early whites in a bank of this compost; I never had them in any situation so large, or in so great quantity. In paring and burning, the land should be ploughed six inches deep in November, to lie rotting in the winter until May; it should be then well scored with the scarifier and other harrows. After cross-ploughing and much harrowing, I have gathered the roots of grass, rushes, &c. &c. into rows with a horse-rake, or with forks; I make one heap and fire in the centre of each four acres, and collect the small sods with forks and carts; this will be found a better and cheaper mode than that of making a multiplicity of fires; in these large heaps much lime may be burned, by occasionally throwing in limestone; when the

the land has got another ploughing and harrowing, put out a sufficient quantity of the ashes to insure a good crop of turnips, which on this land may be sown broadcast; if lime can be added, it will much serve; oats the succeeding crop. Grass-seeds should be sowed, if the land be effectually drained. All superfluous ashes should be carted away; it forms an excellent top-dressing for meadow, provided it be not mowed the subsequent summer; if it is, the land is injured; it will bring one good crop on any upland tillage; the common practice of burning the whole surface, and then applying the entire ashes on the remnant of the soil, taking three or four exhausting crops, cannot be too much reprobated; by it the land is completely exhausted, and men say how injurious paring and burning is, not considering, that the injury lies in making an improvident use of ashes.

Vegetables. I have raised large quantities. I never used any, where they were grown; I think it a slovenly, slothful, wasteful practice; by drawing out to oxen in stalls, or sheep on a grass field, the crop will support double the number of stock; I never found cabbage or turnip to do much for spring in the increase of flesh, which rape will make at any season. I bought for 30*l.* two poor plough-bullocks in November; I put them into stalls, and fed them with the produce of one acre of transplanted rape, and

one

one ton of hay; they improved so considerably, that I sold them the first of April following to a neighbouring butcher, when beef was at 4*d.* per pound, for 60*l.*; their manure was well worth the hay and attendance; they never drank. This was great profit indeed, but nothing equal to the profit the same acre would have made by sheep; it would have fatted sixty.

Cabbages, planted as food for the poor, will be found to come in early in summer, and to yield a most profitable crop. A gardener had one acre of the large Scotch cabbage, which he sold in the town next me, Athy, in the course of last summer, at the enormous price of from six pence to twelve pence per head, which produced him, at the average, nine pence; calculating two on each square yard, fifteen thousand six hundred and eighty heads make the sum of 588*l.*; and if sold at one penny per head, which they would bring at any season, they would produce 65*l.* 6*s.* 8*d.* a sum amply sufficient to encourage the planting, and gratify the most avaricious.

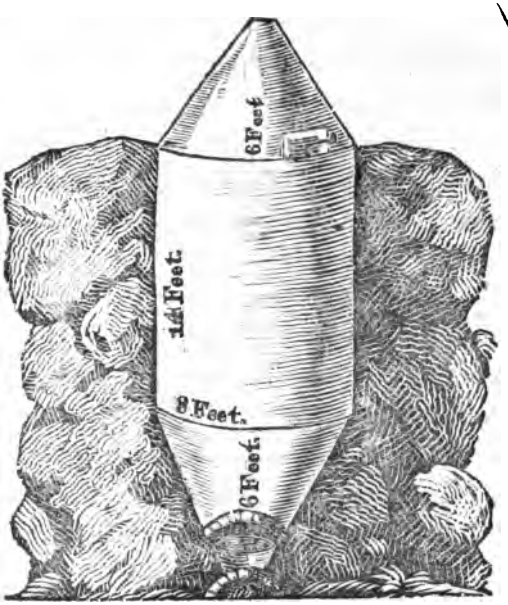
Beans, cultivated on fallow in three feet rows, and the intervals well hoed, will be found an early nutritious food for the poor; with a small quantity of butter or bacon, they are very palatable. I am a stranger to landholders supplying a tenant with seeds to lay down the land; I never knew but one instance,

instance, and then the landlord gave a quantity of clover to sow in his exhausted lands; the crop poor of course. If landlords permit their tenants to break up, contrary to former contract, grass-land for one year, to meet the present exigency, most certainly the tenant should be compelled to lay out immediately, and the bailiff of the estate should see the work properly executed; I think no clog of additional rent should be exacted.

In all first ploughings of grass-land, it should be executed in the beginning of winter; I prefer ploughing the whole depth you intend going the ensuing summer, as thereby, with the assistance of a frost-preparation, all subsequent labour is much eased. I occupy upwards of one thousand acres in different parts of the country, and containing every variety of soil; in the foregoing will be found the mode I have successfully practised in each, and I presume, that they will apply to every soil mentioned by the honourable Board.

Lime. In lime-burning I have made considerable improvement, with a third saving of fuel, by building my lime-kiln according to the opposite sketch.

This kiln is made twenty feet high; at the bottom, a metal plate with holes is placed at one foot height, intended to give air to the fire; over this plate the shovel runs, which draws out the lime; the sloped sides are six feet high, the breadth at top of slope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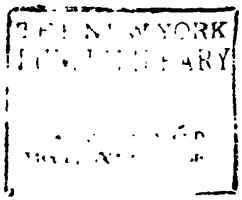
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slope is seven feet; the sides are carried up perpendicular fourteen feet, so as that every part of the inside, for fourteen feet to the mouth, is exactly of the same dimensions; over the mouth of the kiln a cap is placed, built of large stones, or bricks expeditiously contracted to about seven or eight feet high; when two feet and a half high, an iron door of eighteen inches square is to be placed in the side of the cap, and the remainder of the building of the cap to be carried up, until the hole at the top be contracted to fourteen inches; the kiln is to be fed through the iron door, and, when filled, the door close shut. The outside wall must be three feet thick at the bottom, to batter up to two feet at top, and made at such a distance from the inside wall of the kiln, that two feet of yellow clay may be well packed between the walls, as any kiln built without this precaution will certainly split, and the strength of the fire will be then exhausted. At eight feet high from the eye of the kiln, two flues should be carried through the front wall through the packed clay, and to the opposite sides of the kiln, to give power to the fire. With this kiln I have produced one-third more lime from a given quantity of fuel, and stones of bad quality will be here reduced into powder, and may be put into the kiln, without the necessity of being broken so small as is usual.

As many situations may not admit of building a kiln twenty feet high, and as other situations may allow of its being built thirty feet, or even forty, for it cannot be well made too high, the diameter of the kiln should be guided by its height; viz. one-third in drawing part, and two-thirds in the body of the kiln. For several years I have made use of a small lime-kiln in an outside kitchen, the height nine feet, the diameter three feet and a half; in the sides of the kiln next the fire I had three square boilers placed, one of them large, containing half a barrel with a cock, which supplied the family with constant boiling water; for the two others I had tin vessels made to fit inside with close covers, in which meat and vegetables with water were placed, and put into the two small boilers, which never had any water, but had close covers; the tin boilers were heated sooner than on the smartest fire, and, when the meats were sufficiently dressed, the whole was taken up out of the metal boiler; at one side I had an oven placed for roasting and boiling meat; the bottom was a metal of twenty-six inches diameter, and an inch and a half thick; a flue from the fire went underneath; even with the bottom of this oven, a grating nine inches square was placed, which opened a communication between the oven and the hot fire of the kiln; the height of the oven

was

was fourteen inches, shut close by a metal door eighteen inches square, and the top of it, which was level with the mouth of the kiln, covered by another metal plate half an inch thick, on which was placed another oven, and the heat, that escaped through the half inch plate, though not near the fire, was sufficient to do all small puddings, pies, breakfast cakes, &c. &c. &c. The meat in the large oven was placed on an iron frame, which turned on a pivot standing in a dripping-pan, and once in half an hour was turned by the cook; over the kiln I had a tiled stage for drying corn, and a chimney at one side, with a cowl on the top, carried off all steam and sulphur. A large granary was attached to the building; the lime, if sold, would more than pay for fuel and attendance, and I have frequently had dinner dressed for fifty men, without interfering with my family.

CHAPTER VIII.

On the Culture of Potatoes.

THE Agricultural Board of Great Britain has been pleased to express its approbation of the following Essay. See the annexed letter.

BOARD OF AGRICULTURE.

Sackville-street,
June 15th, 1802.

SIR,

I have the honour to acquaint you, that the Board have read with great satisfaction the paper, which you have been pleased to send them, containing your thoughts on the propagation of potatoes, and have desired me to return you their best thanks for the same.

The plate, which was voted you by them, has been long since ready, and is lying here subject to your directions.

I have the honour to be, Sir,
Your obedient Servant,
CARRINGTON, *President.*

Thomas James Rawson, Esq.
Cardenton, Athy.

The

The Carlow Farming Society deputed three of their members to inspect the crops of the country and vicinity in November; after a minute investigation, they voted me their gold medal as the best cultivator of potatoes.

If it be true, that Great Britain has expended upwards of ten millions in one year for the purchase of provisions, it is equally so, that almost the whole might be saved to the nation, by extending the cultivation of potatoes, so as to make them a general substitute for fallow. In Ireland, one-third of the land occupied by tillage is unprofitable to the farmer, who has an immensity of labour, and two years rent to charge to his wheat crop; and at present not one hundredth part of the fallows of Ireland is occupied by a potatoe crop. I have for many years been in the habit of cultivating potatoes in three feet drills with the plough; the difficulty of procuring seed in the year 1800, induced me to adopt the following: I began at November to have a thin slice taken off each potatoe, at the end where the eyes are in a cluster, as they were washed and used by my family, taking care to cut the bottom of the eye: each slice produced four or five eyes, which were sub-divided, dried, and put into casks with oaten chaff from a mill, for use. In March following, they resembled small pieces of buff leather: I planted some acres of them, and can assert,

assert, that not one failed, and their produce came in a fortnight sooner than those planted in the usual way.

It is to be observed, that by the mode, which many farmers about me adopted with success, the sets are taken from good potatoes; no abuse is given the potatoes, as is the case with the scoop; no more of them are used than would be rejected at the table, and the scheme is more likely to be adopted in times of scarcity, than the use of the shoots, for carrying a second or third crop by transplanting. These slices, being in a small compass, will be easily lodged and handled in the nursery. The most prolific sets are obtained from the cluster end; the sets from the best kinds may be removed in large quantities for little trouble, even from one kingdom to another. Having remarked, when potatoes have been second planted in the lazy-bed mode, that some whole potatoes, which escaped in the digging out, and in the turning of the ridges, (by which they fell into the bottom of the first trench, and had a covering of eighteen inches of earth) have always remained in a growing state, long after the rest of the potatoe stalks in the ridge are withered, and that they produce much larger and finer potatoes, it determined me to give the planting of whole potatoes a fair trial. Having marked out a piece of land for that purpose, I caused a hole to be dug in the centre of each

each square yard, eight inches deep, in which I placed a whole potatoe of the least prolific kind, (the red-nosed kidney;) the hole was then filled four inches with dung, and the earth returned; each potatoe produced four or five strong shoots; as they appeared and advanced in growth, I thrice dug the intervals, and as often earthed up the stalks, until there was an elevation of two feet of earth.

In the beginning of September I had several of the banks dug; they produced, at an average, seven pounds each. Thomas Burgh, Esq. who was present at the digging of some of them, remarked, that the upper potatoes were green, and partly above ground, and that more earth should have been given, which clearly shows the advantage of frequent landing. In the digging out of one of the banks, some of the clay was cast over a stalk belonging to an adjacent bank, and four of the joints were covered; on the 14th of September I dug the bank, to which such stalk was attached, and in the short space of fourteen days a potatoe had been formed at each point as large as a walnut, which I produced to the Farming Society at Carlow. The produce of a plantation acre, at the above rate of seven pounds, will amount to the enormous quantity of one hundred and ninety-six barrels, at twenty stones to the barrel, which is more than double the prpduce of the richest ground, cultivated in the lazy-

lazy-bed mode. Cottagers should adopt it; it would enable them, their wives, and children to cultivate the whole of their gardens with good effect, with a small quantity of dung and seed. I have this year (1803) marked out twenty plantation acres for bank potatoes, to be cultivated principally with the plough; I form the land into ridges three feet apart; plough the furrows a second time to gain depth; lay out dung in small heaps, at the rate of forty-one horse-carts to each acre; give the furrows another ploughing to gain greater depth: two women with two lines to cross twenty of the drills, and a three feet rod at either end, is the best way of distinctly laying the potatoes in the bottom of each drill, immediately under where the line crosses. When the two lines are laid out, one woman from either end will go along one line, and lay ten potatoes, and return along the other line, doing the same, the other woman doing the like at the other end; they will then both be at either end of the lines ready to remove each, and so on until the whole of the laying is finished; each potatoe is to be covered with a small portion of dung. The ridges are then to be reversed with the plough; this covers the potatoe with sixteen inches of clay and dung, and in that form the field is to be left, until the potatoes begin to push their shoots, when the whole is to be harrowed across, rolled, and well pulverized.

pulverized. When the shoots appear, if the distance has been carefully preserved, each cluster of shoots will stand in the centre of every square yard; the earth is then to be stirred by a furrow-cutting plough, lengthways and across, and, when prepared, put up both ways to the plants with a double-boarded plough; the furrow-cutter is again to be introduced, for the purpose of preparing clay to land the stalks, which is to be with eighteen inch hoes and shovels, until no more loose earth can be acquired; the field will then appear a number of small conical hills, covered with potatoes' tops and blossoms.

When the potatoes are fit for digging, reap the stalks, and put them in a heap, covering them with quick-lime and earth; with a strong plough pare the earth from the four sides of the bank, and smooth the earth with a small harrow. Two men working together with three-pronged forks or spades will, at one effort, heave out the remaining clay and potatoes, which are to be shaken out to the pickers by boys with light forks.

It would but unnecessarily take up the intelligent reader's time, to go into a full explanation of the excellent fallowing given the land by the foregoing process, which exposes double the surface to the influence of the atmosphere; but as it may appear, at first view, complex or expensive, I shall set down

the cost of an acre treated as above, not taking ploughing or harrowing into account, (as they should be given the fallow without a crop,) and also the expence of an acre calculated in the lazy-bed way.

	£.	s.	d.	£.	s.	d.
Produce of one acre, calculating three pounds and a half to each bank, amounts to ninety-eight barrels, at five shillings a barrel				24	10	0
Four women laying potatoes - -	0	2	2			
Three men shoveling and landing -	0	3	3			
Ditto, second ditto - -	0	3	3			
Ditto, third ditto - - -	0	3	3			
Four men taking out the crop -	0	4	4			
Four boys shaking out - -	0	2	2			
Four women gathering - -	0	2	2			
Twenty stones of seed potatoes, at 3*d.* a stone - - -	0	5	0			
Forty loads of dung, at 1*s.* 1*d.* a cart	2	3	4			
				3	8	11
				21	1	1
Multiplied by - - -						8
Clear profit on eight acres - -				168	8	8
Supposing the farmer to have one hundred barrels with the spade, the produce would be - -				25	0	0

Carried

	£.	s.	d.	£.	s.	d.
Carried forward - -				25	0	0
Three hundred and twenty loads of dung, at 1*s.* 1*d.* per load -	17	6	8			
Seed, eight barrels, (twelve more are commonly used,) at 5*s.* a barrel	2	0	0			
Laying seed and planting - -	2	3	4			
Weeding and digging out - -	2	3	4			
				23	13	4
Profit on the beds - -				1	6	8
Loss on eight acres by cultivating in beds				157	15	4

Here we have eight acres highly dressed for a subsequent crop, with the same quantity of seed and dung used with the same one acre of beds, at the immense profit of 168*l.* 8*s.* 8*d.*; in other words, the cultivating of potatoes in banks raises food for the family, for horses, cows, sheep, pigs, poultry, &c. at little more than eight pence a barrel, whilst the slothful farmer, who uses the spade, is at an expence of four shillings and nine pence. In the year 1801, I cultivated potatoes in the lazy-bed way, in two feet drills, with the spade the intervals dug and landed twice, and in three feet drills with the plough, which succeeded double as well as the other modes. I am aware, that many gentlemen have through curiosity earthed up single potatoes in their gardens, but they have not as yet been made a system of field culture: the introduction of turnips

appeared; (if a crop of wheat be intended, now is the time to sow it;) heave out with two men, one on each side, the entire bank; the shaking out of the potatoes will divide the earth, and cover the seed-wheat; give a light harrowing; two men to each acre will clear the remaining earth and dung out of the original furrows, and spread them over the beds where required. This work should only be performed when the earth is dry; the treading will do no injury; the crop, stalks, &c. are to be removed behind the forkmen as they move, and the seed to be sowed only as wanting to be covered in.

From the success of the last mode of culture, I recommend it in all situations, where the land has been much neglected, is overrun with couch-grass and weeds, and is much impoverished; for this land, the repeated ploughings and harrowings, the gaining a greater depth, and the mixing the under soil with the upper, which has been much exhausted, must conduce much to clean and bring any land into heart; if with the wheat crop red clover be sowed the ensuing April, covered in by second shoveling, and thereby top-dressing the wheat, to feed off such clover with ewes and lambs will complete the recruiting it.

In both modes, much of the aerial potatoes, noticed by Darwin, have appeared above my highest banding; I remarked, where a stalk was cracked by the

the wind or any accident, and that it was afterwards covered with clay, a great number of good potatoes were produced.

Potatoe stalks, as at present treated, become useless; if they are cut, when on the turn from green, and put in a heap with (or without) quick-lime, and covered with earth, they will produce as much dung for [illegible]sequent crop, as was used to produce them in the bank mode.

For two centuries potatoes have been cultivated in Ireland, and are the principal food of the inhabitants; their cultivation is still in its infancy. In the humble hope, that the foregoing may throw some light, and arouse the experimental man,

I am, &c. &c.

Cardenton, Athy,
March 18th, 1803.

An Oration on the history, culture, and qualities of the potatoe, delivered at the public commencement of the University of Pensylvania, on the 8th of July, 1790, by William Birch, grandson of the late Doctor Franklin.

Much has been said against that kind of learning, which consists in the knowledge of words, and the definitions of ancient arts and sciences: to convince this respectable and brilliant audience, that our knowledge

knowledge is not confined to those dry but necessary studies, I have chosen for my consideration the history, culture, and qualities of a simple vegetable, called the *Irish* potatoe. This is a species of the solanum of Linnaeus; it is a native of Mexico, whence it was carried first into Spain, and afterwards into France. Shortly after it began to be cultivated and eaten in France, a contagious fever spread through the country, which was unjustly ascribed to this root; in consequence of this supposition, it was banished completely by an edict of the court, and it was not cultivated in that kingdom for many years after. *England and Ireland, those* former *asylums of liberty of every kind*, afforded the *persecuted* potatoe a sanctuary. In the latter it soon acquired a perfection it had never known before; it became part of the diet of the rich, and the whole diet of the poor; nor was this all, it became an article of commerce, and was soon known and admired in every part of Europe, by the name of the Irish potatoe; a name, which it deservedly obtained, and maintains to this day, from the preeminence, which the Irish nation has obtained in the method of cultivating it. There are circumstances in the culture of this root, worthy your attention; first, it grows equally well in all climates, for, although a native of a hot one, it has been known to succeed in the cold soil of Siberia; second, it matters

matters not, whether the soil be rich or poor, sandy or gravelly, nay it grows, without the aid of earth, in beds of straw or stable manure; thirdly, it grows either from the whole root, or pieces of it; some late experiments prove, that *its increase is much greater from the whole root*, than from small pieces cut in the usual way. It is also peculiar to this excellent root, to be alike agreeable to man and beast; it affords nourishment to the cow, the hog, the sheep, and even to poultry: it is particularly useful to milch cows; for this purpose, the potatoes should be previously boiled or steamed. Sometimes horses show an unwillingness to eat them, but this arises from ignorance; they will soon eat them, if confined for twenty-four hours without any other food; after having been induced once to taste them, they after eat them with as keen a relish as they do oats or beans. They are said to be preferable to both these grains for the common diet of horses, inasmuch as they afford a less stimulating aliment; the grain should be preferred, only when horses are worked at very hard labour, or on journies; in those cases, the potatoes do not afford an aliment sufficiently active and nutritious, to supply that waste of strength in a horse, which attends travelling, or drawing in a carriage, or plough. It is not to be forgotten, that the potatoe is in perfection all the year round, if properly preserved from the frost; whereas all other

vegetables are in season but a few weeks. In order to preserve them during the winter, they should be deposited in pits, dug in the earth below the usual depth of the frost. By a chemical analysis, the potatoe is found to contain,

First, a dry powder resembling starch, which is contained in grain.

Secondly, a light fibrous matter, of a grey colour.

Thirdly, a mucilaginous juice found in many plants.

Fourthly, water.

In a pound of potatoes there are *generally* four ounces of solid matter, and eleven and a half of water; in the solid matter there is generally a drachm of earth.

There are several ways of preparing potatoes for the use of man, such as simple roasting, or boiling them in a steam of water; they are also made into bread, with or without flour; also into biscuit, puddings, pies, and even coffee; besides these preparations, a yeast may be obtained from them, which is equal to the best fermentation in the world, for brewing beer, or making bread of any kind.

Having mentioned the culture of the potatoe, I propose next to take notice of its qualities in diet and medicine.

First, it has been found useful in medicine in those cases, where no other vegetable could be retained on the stomach.

Secondly,

Secondly, it has been found to promote sleep; of this there is a remarkable instance in the annals of medicine: a servant of the Baron de St. Hilaire, after a malignant fever, could not recover his sleep; his master ordered him to sup upon potatoes, and the ensuing night he slept six hours without interruption; the continuance of the same practice produced the same effect, without inducing any change in his constitution. The wholesome quality of the potatoe indeed is fully exemplified in the healthiness and population of those countries, where it is their only food. Dr. Adam Smyth, in his treatise on the wealth of nations, has computed, that a given space of land, in which the potatoe is cultivated, will maintain one-third more inhabitants, than the same portion of land appropriated to any other vegetable. Ireland is a striking proof of this calculation.

That celebrated island has been for many years the *officina gentium* of the world; she furnishes soldiers and sailors to half the nations of Europe; she has nearly filled two-thirds of the most populous states in America with farmers, merchants, and mechanics; and whether it be the effect of the potatoe on the mind and body, I know not, but the natives of that island are all friends to liberty. Where is the legislature in the United States, where the claims of liberty have not been defended by Irishmen? And where is the field of battle in America, that has

not been enriched with Irish blood? Nor are strength of body, and vigour of mind alone to be obtained from the potatoe; they confer upon the face that lovely white and red, which constitute beauty; hence the Irish complexion has been celebrated all over the world, and hence in Lancaster, where they are mostly used, the ladies have obtained, from the charms of their faces, the appellation of Lancashire witches. Farmers of Pensylvania, cultivate the potatoe! Citizens of Philadelphia, eat, oh! eat plentifully of the potatoe! Let them be the constant food of your children, instead of bread, at the intervals of their meals. Legislators of Pensylvania! encourage by suitable bounties the increase and exportation of the potatoe; let this precious root hereafter be blended with the wheat-sheaf in the arms of our state. Hail, highly favoured vegetable! Parent of health, strength, courage, and beauty of the human race! nay more, parent of the human race itself, may we always honour thee; still may we prefer thee to all other vegetables. Sweet root! kind root! I take thee to my bosom! Go people our western country; teach the nations to be temperate; go civilize the world!

CHAPTER

CHAPTER IX.

An Essay on the cultivation of Vegetable Crops.

To the Right Honourable and Honourable the Committee of the Farming Society of Ireland.

MY LORDS AND GENTLEMEN,

You have expressed your wishes for Essays on the cultivation of vegetable crops, as substitutes for fallow, with which Irish agriculture is now so uselessly clogged; I have for some years been in the practice of the modes I shall submit, and though I till extensively, I do not find a fallow without a crop necessary.

The crops I propose treating of, are,

Potatoes.

Cabbages, rape, borecole.

Turnips, rota-baga.

Carrots, parsnips.

Clover.

Vetches, grey peas.

Potatoes. After repeated experiments on the different modes of preparation, I can raise off an acre, with the plough, two hundred barrels, using but twenty-five stones of whole potatoes as seed, and forty

forty cart-loads of manure; the seed potatoes are put in holes at three feet intervals; a small portion of dung put on each potatoe, and the cultivation completed by having the intervals frequently stirred, and, as the earth is prepared, it is put up to the growing plants.

Cabbages, Rape, and Borecole. When the ground has been prepared, it is to be formed into three feet ridges, which are then to be slightly harrowed; ten cart-loads of dung on the ground for each acre, laid on the ground in small heaps; with a plough open the centre of each ridge, keeping one edge of the cut perpendicular; lay the plants against the perpendicular side, at eighteen inches apart; lay a handful of dung on the root of each plant; with eighteen inch hoes cover the dung and root, by drawing back the earth, which had been turned out with the plough; this will leave the field in rows of three feet asunder, and eighteen inches from plant to plant; as the intervals may want cultivation, a furrow-cutting plough must be introduced, and a double-mold board plough to put the earth occasionally up to the plants.

Seed for cabbage and borecole should be sowed the first week in February; for rape on the 12th of May; and for plants to succeed wheat, bere, or barley on the 1st of July.

Turnips

Turnips and Rota-baga. Turnips are cultivated to the largest size, by forming prepared ground into three feet ridges harrowed lightly; open a furrow four inches deep on the top of each ridge, fill this with well rotted dung; sow the turnip-seed in a drill immediately on the dung; cover in the seed and dung, by drawing back the earth, which was turned out in making the furrow for the dung; draw a weighty roller lengthways.

As the ground may want cultivation, the furrow-cutting plough will frequently stir the intervals, but the earth is not to be put up to the growing crop, which is to be thinned by hoes, as it may appear necessary.

Rota-baga is treated in every respect as the turnip. The seed must be sowed on the 1st of June; the most certain way of insuring a full crop, is by transplanting and treating it as above recommended for cabbage, &c.

Carrots and Parsnips. The greatest weight of produce, which can be raised by treating these valuable roots, is by sowing the seed immediately on the dung, and in every way exactly the same as recommended for turnips; by giving them space and air, they grow to an immense size. For swine and horses no food is preferable to carrots, and for all disorders of the bowels, to which the poor of Ireland are much subject, when they live on potatoes alone,

parsnips

parsnips are an effectual remedy; and, being made up in mashes with potatoes, would add much to the cheapness and comfort of the diet of the poor. A good crop of rape, from seed sowed in June, may be raised in the intervals; the taking up the carrot and parsnip crop will earth the rape plants.

Clover. I put in all my wheat in seven feet beds, covered by the shovel with earth raised by the furrow-cutting plough; when the wheat-sowing is finished, I run the furrow-cutter once in the bottom of each furrow. The stirred earth is left under the frost and winter preparation until the beginning of April. I then sow ten pounds of red clover to the acre on my growing wheat, and I second shovel the trenches, covering in my clover-seed, and giving the wheat crop *an excellent top-dressing*; by this means I insure a full crop of clover, which I eat off for two years with ewes and lambs, and then, by reversing the beds, break up with oats or wheat.

Vetches. Vetches promise to be of the greatest use in agriculture, as they will grow in the poorest and most exhausted stubble. They certainly check all annuals, and leave the ground in an apparent good state for wheat, but I must condemn wheat being put into such exhausted worn-out lands; it would be more advantageous to put the ground the ensuing year under other vegetables. I strongly recommend, that vetches should be put into three

feet

feet drills; this will admit of the intervals being frequently stirred, the landing of them will strengthen and support; the admission of air in the intervals will keep the plants sweet and nutritious as food, and prevent that mouldiness, which is a constant attendant on the broadcast way.

Irish Grey Pea. When the farmers so completely exhaust their lands, that they are not equal to any other crop, they then sow them with twenty stones of these peas to the acre; they produce abundantly. A few years hence, I kept eight horses, from the 1st of June to the 1st of October, on the produce of two acres sowed at different intervals in February; they throve on them, and liked them exceedingly well. If they are put into drills in the manner above recommended for vetches, after the intervals have been well cultivated, if it be desired to make the lands very rich, when the peas are in blossom, turn in the stock of the farm, and keep them herded for an hour each day on some particular part, till they have nearly consumed the crop; then plough in the refuse, &c. &c. and the ground will be found in a rich good state for wheat the subsequent autumn.

Rape will bear four cuttings from the 1st of November to the 1st of May; if it is desired to make poor miserable ground extremely rich and good, it cannot be done so cheaply or so effectually as by putting in rape in the manner directed. In the

month of October, put in all the lame, sickly, bad sheep of the farm; it will make them all fit for sale by the 1st of December, at which time clear off the sheep, plough in the decayed leaves, and against the 1st of March you will have a full crop to meet your ewes; after the rape has been devoured till the 1st of May, plough up the entire field, laying it as level as possible; pick off the rape stalks, and convey them to the dung heap; then sow the field with seven pounds of red clover, seven pounds of white clover, and two bushels of ray-grass, and the improvement will be complete.

The Committee will observe, that my object is to raise full crops of vegetables with a very small portion of dung, which must be within the reach of the poorest cottager, who in the manner before detailed may raise abundant crops for his family, his cow, and his pig, and still keep his small spot in *clean good heart*. The more extensive proprietor I wish to impress with the very great profit of drilled vegetables; good cultivation of the intervals, whilst the crop is in its growing state, will prepare the soil to receive, to a great depth, the enriching influence of the carbonic air, which is shed profusely all around from the green leaves of the growing vegetables, thereby returning to the soil ten-fold what they extract from it.

Feeling

Feeling the urgency of contributing my mite to the public stock, I have, from a bed of much pain and illness, hastily dictated the foregoing; should any of my ideas meet a favourable reception, my wishes will be gratified, and, with my returning health, I will be happy to explain and amend any thing amiss.

I am, &c. &c.

CHAPTER X.

On the culture of Rape as food for Cattle.

BATH SOCIETY, vol. vi. article 34.

To the Secretary, &c. &c.

SIR,

I BEG to trouble you with an account of an experiment on rape, treated as cabbage, to which I am encouraged by observing in your publication of premiums for last year, that your Society wished the experiment made; in hopes, that my poor mite may not be unacceptable, I trust for your kindly receiving this effort of

Your very obedient Servant,

T. J. R.

Glasscaly, May 1st, 1790.

On the culture of Rape as food for Cattle.

Having, from repeated successful experiments in sowing rape on wheat, bere, or barley stubble, (ploughed as soon as possible after reaping the crop) as spring food for sheep, determined to try its utility cultivated as cabbage, on the 28th of April, 1789, I had a plot, prepared as for cabbage-seed, sown with rape; the plants came up, were very promising, and fit to put out the 20th of June; I had prepared a seven-acre field, which had borne potatoes two years, after being well manured with the common clay-gravel, and had it then in fine tilth for turnips. As I had no conception, that the rape would rise to such magnitude as to injure the turnips, I marked out furrows with the plough at ten feet asunder, laid the rape at eighteen inches apart against the upright side of the furrow, and covered the roots by returning the earth, which the plough had thrown up, with eighteen inch hoes; I then sowed the whole field with turnip-seed by a drilling machine of twelve inches apart, and bush-harrowed it, and rolled in the seed without injuring the rape-plants. The rape succeeded beyond any expectation I could have formed, so that it overshaded and injured the turnip for eighteen inches on either side, which in the intermediate spaces were a very

very fine crop; as nearly as I could calculate, two acres of the seven were occupied by rape, and the remaining five by turnips. The rape continued to flourish until the 1st of November, at which time it averaged upwards of twenty pounds a head; some of them came up to forty. Such was the extreme luxuriance of the crop, that I dreaded its not standing the winter, and on the 1st day of November put two hundred large wethers into an enclosure of thirteen acres of light land, which had been eaten bare, and began to give them the rape; they immediately took to it with eagerness, and in three days not a sheep in the whole but would attack the carter for his breakfast; I continued to give it in profusion without hay or any thing else, and it not only kept, but very much pushed forward the two hundred sheep until the 1st of January. I then began to give the five acres of turnips, which, with the help of a quantity of hay, did not last the sheep more than seven weeks, which evidently shows, that one acre of rape is equal to three of turnips, although they were as good a crop as ever I saw; and, had the rape been planted in three feet rows, (the manner I now propose to treat it) and properly earthed, I have no doubt it would have been, if possible, much greater. I kept in a walled yard twenty porkers from the 1st of September to the 1st of January on the under-leaves; they, as well as poultry

poultry of all kinds, are exceedingly fond of it. I tried some Scotch cabbage in the same field; their weight did not average more than seven pounds a head.

Evidently rape will flourish where a cabbage will not exist, and drought, the bane of cabbage, does not affect it. The numberless advantages of introducing rape, in addition to turnips and cabbages, must be evident; two drills, which I left uncut, stood the winter remarkably well, so that my fears were groundless; and I have no doubt, but that rape will, on trial, be found to be the most profitable vegetable discovered for the *first* and *last* of a course of spring-feeding sheep.

I shall beg to add another remark, which is, that instead of my usual method of ploughing up the stubble, and sowing rape-seed as first mentioned, I am determined to sow in a prepared bed the 1st of July, and, when the stubble ground is well handled, to put in the plants in three feet rows.

This will admit of tilling the intervals, and greatly supply the farmer's wants in April following, or bring an excellent crop of seed in August.

Expences of one acre of Rape.

	£.	s.	d.
One year's rent - - - -	1	5	0
Three ploughings and harrowings - -	1	2	6
Carried forward - - -	2	7	6

Three

	£.	s.	d.
Carried forward - - -	2	7	6
Three women laying the plants - -	0	1	6
A boy and cart attending sheep nine weeks, at twelve shillings per - -	5	8	0
Seed not worth charging			
	7	17	0

Product of one acre of Rape.

Supporting ten porkers four months, at two shillings per month - - -	4	0	0
Fattening one hundred sheep nine weeks, at six pence per week, being the lowest joisting price - - - -	22	10	0
Mucking six acres and a half of light land, worth three pounds per acre - -	19	10	0
	46	0	0
Deduct - - - - -	7	17	0
Clear profit, besides the best fallow -	38	3	0

It would seem on the whole, that this gentleman has made a very useful discovery, but, like most others in new experiments, he stretches too far in the estimate of profit. This article seems to be beyond all moderate bounds; the reader therefore will appreciate according to his own judgment.

Bath Society.

Note.—Mr. Fishbourne, one of the best sheep farmers of Ireland, and many other gentlemen, who have

have extensively cultivated transplanted rape, can reply to the doubts of the Bath Society. As an Irishman, I feel proud of being the first to cultivate a vegetable, which, on fair trial, will be found of more general use than any hitherto discovered.

T. J. R.

May, 1807.

CHAPTER XI.

On the Culture of Vetches.

Extract of a Letter from Mr. G. to J. P.

I MAKE use of vetches as a green fallow crop, and a preparation for white corn; as soon as the stubbles are cleared, they are immediately ploughed, and the winter vetches harrowed in broadcast from fifteen to eighteen stone per acre. If the ground is clear, and in good order, one ploughing is sufficient; if otherwise, any additional expence in tillage will be amply repaid in the cleanness of the succeeding crops; if the land is very foul, I recommend to be lightly ploughed, and immediately ploughed back again, by which means the weeds are thrown to the surface, and are easily harrowed out. Cooke's horse-rake is an excellent machine for cleaning ground. A light roller, drawn across the ground, will

will facilitate the progress of the scythe; if very stony, it may be picked by children in the course of the winter. The proper time to cut the vetches for soil is, when they come into full blossom; cutting them earlier is a great disadvantage; if for hay, they should be cut when they begin to form their pods. In wet weather they are difficult to make up; after lying on the ledge, make them into small cocks, and turn them occasionally; but they should not be spread or shook much about, as that would break off the blossoms and small pods, which are esteemed the most nutritious part. Vetches are reckoned a highly meliorating crop; they will grow on any kind of ground, (provided it is not wet) on rich loam, stiff clays, and light sands. A sharp smart soil, not over rich, is best calculated for a seed crop. For green soiling, the ground cannot be too rank. As the vetches are soiled off, the plough is introduced to prepare the ground for wheat, which on no account should follow a seed crop; a thick crop of vetches always produces a fine tilth, and the ensuing crop of wheat will be found better in proportion to the goodness of the preceding one of vetches; this luxuriant and smothering foliage creates a putrid fermentation peculiarly favourable to vegetation; hence it is asserted that shade, and not exposure to the sun meliorates land. When ground is marled, limed, or dunged, instead of corn I should

recommend a green crop to begin the course, as it is a general observation, that those manures send up a great quantity of weeds the first year, to the great injury of the corn; a crop of vetches, by their luxuriant shade, will stifle or get the better of many of the weeds, and such as out-top them, when the vetches are cut for soil, are carted away with the crop. The ensuing wheat or barley will then be perfectly clean, and receive the entire benefit of the manure, without rivalship from weeds. By these alternate crops of vetches and wheat, land will be kept in constant heart and fine tilth; it will be easier ploughed; the dung, raised from the *green, will* compensate the land for the exhausting quality of the white crop. Our climate, and the humid state of our atmosphere are peculiarly adapted for the growth of these crops; rye sowed early and thick for early spring feeding, (I have rye over ground) winter vetches and clover, spring vetches, rape, cabbages, and turnips, &c. will supply an uninterrupted succession of green fodder during the entire year. Rye is a most excellent soil for horses in the early spring of the year; it should be cut before it runs into ears, as it then grows hard and unpalatable; it should be sown very thick on potatoe ground, or on some rich dead soil, about twenty-five or thirty stones to the acre; some winter vetches sown amongst it is an improvement. This crop must be succeeded by

by rape, turnips, or cabbages for the sheep during the winter. With us it is customary to plough deep for wheat; on the contrary in England, the farmers of the haut ton do not exceed a depth of from five to seven inches; they assert that deep ploughing turns up to the surface a new crude soil, which is unfriendly to white corn, until such time as it is meliorated by exposure to the atmosphere; they therefore recommend deep ploughing for the green crop, and a light tilth for the succeeding one of corn, which will then enjoy all the benefit of the dung and new mould, which a deep ploughing would bury beyond the reach of vegetation.

The following is my course of crops on a field of eighteen acres, which fell into my hands a few years ago in a dirty exhausted state. I commenced by draining, liming, and gravelling; the lime at the rate of two hundred barrels to the acre, turned in at two different ploughings; in the spring of 1801, sowed one-half under vetches, the other half planted with potatoes and dung; cut the vetches for soil, carted them to the cattle: sowed the entire field under wheat, the vetch part with the drill machine, the potatoe part broadcast; at present nearly fit to reap, and, if the weather proves favourable, likely to yield a very fine crop, the drilled part particularly, which had the benefit of horse-hoeing, as loose as garden mould. I intend to sow this field, as soon

as reaped, with winter vetches for soiling next spring, to be succeeded immediately, as the vetches are cleared away, with turnips and rape for the sheep, and the ensuing spring I will lay it down with barley and clover.

4th September, 1802.

Knocknagee. Mr. Butler has several hundred acres of a light, dry, shallow clay soil, which if manured ever so well, and turned out under sheep, after two years annually decreases, and after five or six years turns to its primitive unthriftiness. To remedy this, Mr. Butler generally breaks up in the fifth year, limes, fallows, manures, and by this means raises very fine crops of wheat, turnips, barley, and red clover. With great good sense, he sent one of his sons to spend some time in Mid-Lothian, to be instructed in their excellent system of farming, and since his return he has raised for his father and himself the largest crops of drilled turnips ever known in the country, and that in a soil, where he can hardly grow a thorn-hedge. *None of his immediate neighbours grow a turnip.*

Mr. Butler has cultivated vetches with great success, both on old tilled ground and fresh broken lay. He mows for hay, when the pods begin to form, and saves and makes up in haggard-rick in the same manner as common hay. I once rode with him into his

his haggard, where were two ricks, one of well saved sweet hay, the other of vetches. We unbridled our horses, and turned them loose; they smelled and tasted them both, and then turned their backs no the hay and devoured the vetches. In the winter of 1805, Mr. Butler, when feeding his brood ewes with hay and turnips, ran short of hay, and replaced it with vetches. At first the sheep did not relish them much, but in a little time they would not eat a turnip, whilst a vetch remained. When Mr. Butler mows off his vetches, he ploughs, limes, and prepares for wheat; the ensuing September the land is considerably aided in its amelioration by growing the vetches; he considers the succeeding crop of wheat better after the vetches, than after the fallow. Vetches must force themselves into general use; for the poor worn-out lands of Kildare, they offer an healing balsam to their worn-out constitution, and, as a substitute for fallow on such lands, they stand unrivalled.

Kilkea. Mr. Greene thirty years since built bolting mills on the river Greece in the vicinity of Carlow, Castledermot, and Athy, and took several hundred acres of the same land as Mr. Butler's poor, exhausted, and worn-out, at a great rent. By much labour and assiduity, particularly by the introduction of vegetables and winter feeding of sheep, he has considerably improved it. He saw the effects of watering on the lands

lands of Glassealy, and eager to grasp at every thing, that could add softness to his sterile soil, he at considerable expence made a five feet trench for miles through his lands, filling it from a high situation of the Greece, and conveying water so as to float it over the greater part of his grounds, all which is done by catch-work, without throwing the ground into the unsightly form of ridge and furrow; he has brought ground, where a scythe never travelled before, to yield the greatest crops of meadow. As there is much inequality in Mr. Greene's lands, there are several parts, that cannot be commanded by water.

He has several boats on the Grand canal for the conveyance of his flour to Dublin. He took the scavenging of some streets in Dublin, to get possessed of a large body of manure, which his boats return laden with to Athy; there he is obliged, from the unfinished state of the Barrow navigation, to put his manure into smaller boats, to be conveyed to within two miles of his land by that river, drawing it the remainder of the way in hired cars; thus it costs him barely for the carriage from Athy to his land upwards of eight shillings a ton. Nothing but extreme spirit can carry a man through such great and expensive works; but, in payment, I last October observed very fine bullock pasture on high dry grounds, where half-starved heath had been the quondam tenant. Mr. Greene, having gone over

and

and improved most of his lands, is now at work at that most excellent plan of vegetable garden for his stock.

He has for four years had thirty acres under a succession of drilled vegetables, viz. cabbage, turnips, rape, and carrots, by which he has brought this field into the highest state of cultivation. He has laid out with barley and seeds, having prepared another thirty acres for the same course: I viewed his crops minutely this last season; they were all superior in their kind. His carrots, at near four feet asunder, produced twenty-seven tons per acre. The crops were mostly consumed by five hundred sheep, which cost him 1250*l.* and by a large number of cattle, on which he would have lost considerably, but for his large supply of vegetables, as, from the combination of the few English contractors for Irish beef, the oppressed Irish grazier could not get first cost for his cattle.

Mr. Greene attempted placing the carrots in pits like potatoes, but, the fermentation being too great, he was obliged to remove them. Cabbage, turnips, carrots, &c. when topped and tailed, may be well preserved in an open shade, by mixing them in layers with dry straw; if no shed be at hand, they can be introduced into straw stacks so constructed, that each layer of straw shall be like a shed over every layer of vegetables, to protect them from wet.

When

When carrots are for some time in that situation, they may be placed in pits like potatoes.

In spring, 1806, the Reporter ploughed four acres of a poor lay field, cut the furrows, used the slicing harrow lengthways and across, then harrowed in ten stones of spring vetches, and four stones of potatoe oats to each acre; they both grew well, the strong oat stalks serving as stakes for the vetches. The vetches retained a certain mellowness about the roots of the oats, which produced a better crop than in adjacent grounds, which had been well tilled and enriched the previous year with potatoes. On the 28th of July, the blended crop was mowed before either oats or vetches were within a fortnight of ripe, bound, stooked, capped, and left to season for a fortnight; then carted to one side to leave room for ploughing, &c. and transplanting rape; when finished, it was observed that some plants of oats appeared, which had shed in the drawing off the stooks; they flourished amongst the rape, and by December might be mowed, though there did not appear more than a stone to the acre, it came up so fine; the rape was cut as wanted, and harrowed away through the spring, and whilst this article is writing, on the 1st of June, 1807, a thick fine crop of oats is shooting out; the one stone of seed has stooled (planted) so amazingly, that each single grain produced from twenty to thirty shoots. Here

is

is great and glorious argument for thin and early sowing; no doubt one half of the seed of Ireland is thrown away. But to return to vetches, if this does not satisfy, no remark can be of use. They were used with horses the entire winter and spring, cut with a straw-cutter, and were the principal subsistence of six carriage, saddle, and working horses, who throve and bore their work better than they would on the best hay and oats.

Irishtown, midway between Athy and Ballitore. Mr. Christie. Some years since two hundred acres were rented at four shillings per acre; the possessor and his son, who succeeded him, barely existed; the lease expired, and it was set to the son at fourteen shillings; he was obliged to increase in industry, and had a hard struggle. The nephew of Mr. Christie, near Belfast, took the entire two hundred at forty shillings per acre; all the neighbours thought him mad, particularly when he laid out a large tract for turnip culture in a poor reduced, worn out-clay soil, where a turnip could scarcely be produced in the kitchen-garden. He set six strong horses without drivers to work with three Scotch ploughs; by repeated ploughings, harrowings, and hand-weedings, he most completely cleansed and reduced to garden fineness; he ploughed into ridges thirty inches apart; filled the intervals with dung; reversed the ridges, which

covered in the dung; harrowed lengthways: with a machine he opened the top of each of four ridges, deposited the seed in drill, and harrowed and rolled all with one stroke of the machine. Mr. Christie has never failed for some years to raise the greatest crops of turnips; he turns out with corn and red clover, which he does not feed off with sheep.

He applies all the turnips to feeding bullocks in the stall for the making of dung to manure his next turnip fallow, and thus travels with rapid strides over his farm, which he has certainly made of double the value it was when he undertook it, and it may now be worth what he bargained for; but he was young and unacquainted with the soil; it is a pity so much industry should be so badly placed.

Mr. Christie is likely to be of considerable value to the vicinity, if they will but examine what he does; from his plan a number of Scotch carts and ploughs have started up in the neighbourhood.

Mr. Christie, though the best cultivator of turnips I ever saw, will permit me to say, he does not turn his fine crops of clover to the best account. No stock pays so well as ewes or lambs, or other sheep stock.

Mr. Christie's fine, strong, well fed horses, consuming eighteen stones of oats per day, certainly did very much work for some months; they then began to lose their flesh, and it was most evident, that in so

strong

strong a soil *one* ploughing in each year was much better given with bullocks.

His ultimate success will do much to root out Irish prejudice; I wish it from my heart.

Irrigation, or the watering of land. The greatest and cheapest mode of bringing any soil to produce the heaviest meadow is scarcely known, or but little practised in Ireland; some few have made experiments, but, though crowned with the greatest success, the stupid prejudice of the Irish farmer will not suffer him to quit the old cow track road of his grandsire, although he could travel a smooth clear one by stepping over the next hedge. Why should he be wiser than his grandfather?

In all mountainous or hilly districts, the watering the adjacent lands becomes a task, which any schoolboy can perform. I have long tried, and found great effect from throwing quick-lime into the conducting drains; this immediately mixing with the water was conveyed in the most minute form, and applied to the extremely fine organs of the most tender plants. It is well known, that a pound of lime in a gallon of water will so impregnate it, that half a pint of such water shall diffuse its effects through the whole human frame. Its influence on vegetation is still stronger. If reservoirs to hold up the water for some days be erected, filled with water, in which a small quantity of quick-lime be

 infused,

infused, or, if lime be not at hand, rotten dung, such water will be found of twenty-fold the value it was before; when it is ready for spreading over the land, black cattle should be driven in to agitate the water.

All water is more or less valuable, in proportion to the soils it passes through, and the quantity of manuring matter conveyed over the fields; though spring water may in some instances have had great effects, I would not have my reader swallow the opinion of some authors on the subject, who seem to think, that all the benefit of irrigation is acquired by passing *any* water on the surface, according to their laid down plan. I speak decidedly from much experience. A farm near Naas, where I introduced the flood water from the Blessington hills, had a field of ten acres so covered with stones, as could scarcely be met; from the quantity of calcareous matter conveyed and deposited from the flood-water, every stone was covered in three years, and that wretched poor field is now a good meadow. One pint of Michaelmas flood water is worth gallons of March floods.

I first turned my thoughts to watering, from reading different travels through Egypt. I talked with my intelligent relative, William Barton, of Mount-Roth in the county of Kilkenny, of whose irrigation Mr. Tighe, in his very enlightened account of

Kilkenny county, is pleased to approve. I mounted on a hobby, which he has bestrode with the happiest effects. As Mr. Tighe did not describe Mr. Barton's process, or the manner of using the water, &c. I hope I may be excused going into it, though it is a subject out of the county.

Mr. Barton's watered meadow contains ninety acres; these he divided into compartments of six, eight, and ten acres; by conducting trenches, eleven feet wide, perfectly level in the top from one end to the other, these are filled at pleasure by a head conductor, taken from a high situation on the side of a mountain brook on the Castlecomer-hills, communicating with these grand divisions. The divisions are intersected by small embankments, which are so rounded as to be easily passed by the scythe; these are formed so as to hold water, and are placed to surround one, two, three, or four acres, according to situation; on the top of each a small trench is made, to convey the water at pleasure from the grand divisions into each compartment; in the lower point of each a sluice is made, to discharge the water expeditiously. If suffered to remain on the land twenty-four hours, it will deposit its sediment; longer would be injurious. After a fornight, when the ground is quite dry, the dose may be repeated.

To

To simplify the above, and bring it within the compass of all my readers, lay a window-sash on the flat before you; call the sash-frame the conducting drain on one side, the tail drain on the other; the divisions between the panes, the embankments, on the top of which the water is to run; the panes, the divisions under water alternately, and the whole plan is before you.

I have been explicit in my account of Mr. Barton's method, as, from the flatness of the county of Kildare, there are millions of situations, where a similar plan could be formed; no land too spongy for irrigation, if springs be first conquered, and a covered drainage effected; the weight of a body of water on the surface would tend to consolidate the most spongy, and by its weight close the soil, and dry it with effect.

I have brought water to command two hundred acres of Glassealy, by taking up a small brook; it can only be used in the winter months; the lands lie mostly on the side of a gently sloping hill; when the water is brought to the highest point of the land to be floated, conductors should be formed with the smallest depending fall, so that, when full, a stop placed in any part shall throw the water over the land beneath; at every sixty yards another conductor, and so on until the whole piece is crossed by the conductors. The first flows the water over

sixty

sixty yards; the second operates as a tail drain to convey away the water, when it has floated sixty yards; then the second becomes the conductor to float the next division, and the third acts as tail drain, and so on; in all inequality of ground the highest points, where the water can run, must be pursued for the head-drain, from whence all others are supplied. It is impossible to give any determinate plan for catch-work; it must vary with every inequality of ground, and in most cases a number of small pipe-drains will be necessary; this can be done to any extent, by raising one sod with the plough, which can be laid back when the floating is over. An intelligent labourer must constantly attend to change the flow of the water, and prevent its running too long in one place. Lands floated at the approach of frost will acquire a thick coat of ice; remove all under water, when the ice is formed; when the thaw comes, the whole will smoke as a furnace, and the soil be filled with the dissolved particles of the ice.

To take levels for irrigation, provide an upright board of four inches in breadth, five feet high; place in it a plumb, to ascertain when perpendicular; place a light arm of five feet exactly horizontal; put the upright into a block at bottom, with four iron spikes to be pressed into the earth, as it may be necessary to establish the perpendicular; look from

where

where it is placed along the arm, and it shows you to what point water may be conducted. Provide two light poles of twelve feet long; form them like a pair of extended compasses, so that from foot to foot will be about fifteen feet; brace them across; in the centre hang a plumb from the top, and mark the cross-brace, so that the plumb shall ascertain, when both ends are level, by a wedge or raised sod mark; then move the foot, No. 1, keeping the other steady; when the level is ascertained at fifteen feet, mark and move the foot, No. 2, and so continue to move alternately, marking from the point, where water is, to where it is to be brought; this last will guide round every inequality of ground, and mark out the line for the conducting trench. These two instruments are all the irrigator will want; they should be so light and handy, as to be easily removed from one place to another. Two men will mark out several miles in a day.

By irrigating with water, in which quick-lime was thrown, I improved twenty acres of light land so highly, as to bear two abundant crops of potatoes with the spade; they are now half barley, and half transplanted rape.

Before I quit this subject, I must take notice of Mr. Griffith's irrigation at Millicent, near Naas; I suggested to him, that much of his land lay well for Mr. Barton's system, but he thought English authors

authors could best direct; he had the command of an overfall from the canal, and went to considerable expence in making trenches; ploughed all his land into high ridges of ten or twelve feet broad, one-third of which is taken up with a trench at top to carry on the water, and another at bottom to carry it off, and throw it into the most hideous form. I hope he may benefit by his endeavours; I must fear it.

He should have his ridges at least twenty feet wide, not raised too high in the middle, which makes the fall too rapid, and then perhaps his adopted plan would better succeed. It is a painful part of my duty to point out any defects, particularly in the practice of a gentleman I so much esteem; the only return I can make is, to offer my urgent advice, that he will embank some one piece, and treat it in the manner of Mr. Barton's, than which nothing can be less expensive or more perfect, where grounds lie so flat, as that they can be floated by moderate embankments.

At Poplar-hall, near Ballitore, Mr. Farmer has planted with success on drained bog; he last spring sold three small bullocks and a heifer for 23*l.* each; they were at constant work, their principal food transplanted rape. If the owners of large tracts of bog took off the surface water to the depth of four or five feet, they could then plant all the fir tribe

with success; in no other situation will liburnums grow to such size. A first planting may after a few years appear stunted; young trees should then be introduced, which will flourish in the shelter of the former. In bog planting, furze-seed will produce warmth to the roots, without injuring the upright growth; they will be found very useful.

At Monasterevan Mr. Cassidy has much improved; he farmed one hundred and twenty acres of poor worn-out land, which under his excellent management, from not being worth fifteen shillings, is now worth five pounds an acre; he is a striking proof that, the more a man manures, the greater will be his profit; a few years since, his expences of cultivating, manuring, &c. exceeded *in one season* 500*l.*, yet such were his great crops, that he was repaid all rents and expences, and was 450*l.* in pocket at the end of the year.

Mr. Cassidy has tried what is commonly practised in the county of Carlow; there the farmers consider a barley stubble the best preparation for wheat; Mr. Cassidy had thirteen barrels of wheat per acre after barley. To those, who will sow two white crops in succession, this may be an useful practice; it gives opportunity of preparing, by winter fallow, potatoe land for barley, to be succeeded by wheat.

Mr. Hamilton of the Curragh has succeeded in continued white crops; he has but a confined extent of

of land, of which fifteen acres are under perpetual tillage, thrown into three acre allotments under,

1 Rape transplanted,
2 Potatoes drilled,
3 Wheat,
4 Oats,
5 Oats.

He winter fallows the oat stubble, and works it until midsummer, then ploughs into three feet ridges; puts well rotted dung into the furrows; covers in by reversing the ridges; dibbles in rape plants from seed sowed in nursery bed the 12th of May preceding; ploughs the intervals during the summer: when the rape is used, in April he opens the dunged ridges; carries away all stalks; puts in each a row of potatoe sets, and continues working and cleaning, until the potatoes are got off, when he puts in wheat; from the dunging, and two years fallow crops, he is enabled upon very poor land to raise three immense crops. Some time since, two intelligent gentlemen minutely viewed, and made an accurate calculation of the value of the crops, which they estimated at *twenty pounds* an acre, one with another. Here are three hundred pounds a-year, made of fifteen acres for many years, on which an Irish farmer with his succession of fallow, wheat, oats, would soon break.

The Reporter's great object is, to convey instruction wherever he may glean it; he may therefore be excused, if he travels a little out of the county.

About one hundred acres of the lands about Carlow are parcelled out in one, two, and three acre pieces, and let generally at 10*l.* per acre to a number of cottagers, who supply Dublin, and most of Leinster with onions; they are all well cloathed, in comfortable habitations, and, if their industry was generally practised, the cry of the poverty of the poor Irish peasant would soon cease.

The grower of onions generally divides his little garden (if I may so call it) into fourths; his succession,

1 Onions.
2 Potatoes.
3 Barley.
4 Clover.

He puts all the manure he can muster on his onion fourth, and he prefers street-sweepings to all other; early in March he sows his onion-seed in beds, five and a half or six feet wide; with the onions, he sows a third part of a crop of parsnips, and a small quantity of drumhead cabbage; when the onions are well up, women are put to weed; if the onions be a full crop, every parsnip is treated as a weed; if any miss of onion be on three inches, a parsnip is there suffered to grow; when the weeding

is

MACHINE

finished, the alleys are dug deeply, and the weeds uried; the few cabbage plants, grown on the ridges, re planted in the furrows; under this management, the largest cabbages, and parsnips measuring twelve inches in circumference are grown, without interfering with the great onion crop. Here is industry; here is exertion; no price will stop the onion growers in the purchase of manure, which generally costs at the rate of two shillings per hundred.

Though the expences attending an acre manured, and treated as above, may appear enormous, the one-fourth under barley, which is generally seven barrels, will defray the whole; the fourth under onions produces 25*l.*, which leaves the farmer after the rent of the whole acre 15*l.*, besides thirty barrels of potatoes, and a rood of clover to soil his cow and horse.

The Reporter constructed, and has used for some years a machine, by which two men can lift, to a height of seventy feet, five hundred loads of hay or corn in ten hours; its expedition, and the great saving of labour and of corn, in preference to pitching up with forks, make it a most desirable object, and its cheap construction brings it within the compass of every farmer.

In a strong ground framing of timber, nine feet long, and six wide, two thighs or upright pieces, twenty feet long, ten inches square, six feet asunder at

at bottom, and two feet and a half at top, are inserted; at top they are connected by a broad flat piece, through which a hole of one foot diameter is in centre; a pole thirty feet high, with a gudgeon at bottom, is raised between the thighs, and admitted through the hole by an opening in the side, which is to be clapped close when the pole is placed; on the top of the pole (or mast) a yard-arm, twenty feet long, six inches square, is placed at an equal length at either end from top of mast, braced from the points to the mast above the neck; in either end of yard a pully is placed, a strong line rope is made fast to one end of yard, it passes through a loose moveable pully with a hook, and then goes over both pullies of the arm, and passes down to a pully at foot of mast, and thence either to a capstern worked by two men at some distance, or by a rack and pinion placed between the thighs. A car, carrying five hundred weight, is brought to the loose pully; the load tied in a bundle, by crossing the ropes; if in a smooth way, it will need no other tying; if in an uneven road, a yard of rope to the car-shaft will attach the other rope, that ties the load in a bundle; the hook of the loose pully is put in the rope at the top of the bundle by the driver, who gives the word *away*, and in half a minute the load is raised twenty feet high; a slight line hangs from the yard-arm to near the ground, and by it the load is guided

to

to either rick, if two are making, or, if but one, to any part of it within reach of arm. There must always be one rope more than there are cars, a spare rope to be ready to throw from the rick to the car to prevent delay.

If corn be making up, when the rick gets too narrow to hold an entire load, it should be divided and placed in a scale board, which can be held up to the rick-maker's side, that he may take out the sheaves as he may want.

The entire expence must be under 10*l.*

CHAPTER XII.

Irish character, customs, &c. &c.

MANY centuries since, the provincial chieftains had houses of entertainment for the gratis accommodation of all travellers; long since, this good custom has been forgotten, but hospitality warms the breast of every cottager; the poorest beggar, who enters the cottage, is greeted with a most kindly welcome; room is made in the warmest corner; whatever the cottage can produce is laid before the guest; the tobacco-pipe goes round, and the best hammock is prepared. The great propensity to early marriages I have already mentioned, but the

want

want of seminaries to educate their children throws them into groups on every road, where they are early initiated in every vice; the want of early religious impressions is the bane of society; the pointing out to the infant mind the knowledge of right and wrong, of religion and vice, will never forsake them.

From the ignorance, with which the Irish peasant is thrust into life, it cannot be wondered at, that he is bigotted and superstitious; many rites and ceremonies of the worshippers of Baal are as much alive, as if Christianity were an introduction of yesterday: the fire of the Roman goddess Vesta was preserved by holy St. Brigid and her followers for centuries at Kildare. On the first of May, opposite every cottage door, a fresh-cut bush is placed, covered with primroses, or any other flower that is blown, and on the eves of Saints' days bonfires blaze all over the kingdom.

Every rath or place of ancient superstition is looked on as sacred, and the belief in legendary tales, fairies, ghosts, and hobgoblins, and the howling of dogs, is as much alive in every peasant's breast, as in the ideas of the compiler of Ossian's interesting Irish poems.

A wake is attended through the night by hundreds, where smoaking, and a variety of sportive gambols seem to say, they are come to the house of

of feasting, and not of mourning; those, who can afford any expence, provide quantities of cold meat, wine, cakes, &c. for the funeral, and entertain all comers, (so it was when Shakespeare wrote:) all the old women in the neighbourhood attend, and celebrate the supposed virtues of the deceased. To be absent on these occasions, is a piece of unfriendly conduct never to be forgotten.

The customs of gossipshred and fosterage are in the greatest force. Gossips will fight most fiercely for each other; in all conversations they call each other by the endearing name; not to have gossips to stand for children, when baptized, would cast much reflection on the parents.

It is much the custom to put children to nurse; not only the nurse, but the nurse's husband, and all their children ever after consider the nursed child with most affectionate respect.

The Irish character for bravery, as soldiers and sailors, needs no panegyric.

Education and cherishing are only wanting.

CHAPTER XIII.

Tables of Baronies, Towns, Plough-lands, &c.

THE county of Kildare contains fourteen baronies, whose names, and the number of plough-lands in each barony are, as follows: viz.

Baronies.	*Plough-lands.*
Carberry	17
Clane	12
Connell	12
East Ophaley	13½
East Narragh and Rheban	7½
Ikeathy and Oughterany	14
Kilcullen	5
Kilkea	11¼
North Naas	13½
North Salt	18
South Naas	11½
South Salt	8
West Ophaley	12½
West Narragh and Rheban	7
Plough-lands county at large	162½

Contents

Contents by Baronies.

Baronies.	*Bog.*	*Arable.*	*Total.*
Carberry -	10,000	20,907	30,907
Clane -	6,845	11,891	18,736
Connell -	7,152	13,941	21,093
East Ophaley -	5,861	14,079	19,940
East Narragh and Rheban		12,792	12,792
Ikeathy -	1,276	14,471	15,747
Kilcullen -		5,040	5,040
Kilkea -		27,187	27,187
North Naas -		15,192	15,192
North Salt -		13,291	13,291
South Naas -		11,203	11,203
South Salt -		10,115	10,115
West Ophaley -	7,481	16,589	24,070
West Narragh and Rheban	2,420	10,922	13,342
Curragh race ground		3,000	3,000
	41,035	201,220	242,255

Carberry.

Parishes.	*Towns.*
Ballinadrumna.	
Kilreny.	Clonard.
Cadamstown.	Carberry.
Nurney.	
Mylerstown.	
Carrick.	
Kilmore.	
	Dunfort.

Parishes.

Dunfort.

Arkill.

Carberry.

Fues.

The barony of Carberry assessed for seventeen plough-lands.

Clane.

Parishes.	*Towns.*
Timahoe.	Clane.
Ballinafa.	
Clane.	
Killibegs.	
Downings.	
Bridechurch.	
Carogh.	

	Plough-lands.
Clane and Ballinaboly	1
Millicent	$\frac{6}{8}$
Firmount	$\frac{5}{8}$
Ballinagappah	$\frac{1}{2}$
Moiety of Kilmurry	$\frac{1}{2}$
Beatoughstown	$\frac{1}{4}$
Landenstown	$\frac{1}{8}$
Barretstown and Waterstown	$\frac{1}{8}$
Castlekeely	$\frac{1}{8}$
Carogh	$\frac{1}{4}$
Gingerstown	$\frac{1}{4}$

Halverstown

	Plough-lands.
Halverstown	1/4
Yeomanstown	1/4
Donore	1/8
Stickins	1/4
Killibegs	1/3
Fleshtown	1/4
Curryhills	1/3
Longtown	1/3 & 1/8
Downings	2/3
Gragues and Moods	2/3
Newtown Donore	1/4
Oldtown Donore	1/4
Timahoe	1
Hodgestown	1/3
Curduff	1/3
Coolcanigan	1/4
Blackwood	1/4
Ballinafa	1/3 & 1/16
Staplestown	1/3 & 1/16
Gervoge	2/3
Giltown	1/3
Corcorogh	1/3

Connel.

Parishes.

Kilmooge.

Rathermine.

Feighcullen.

Morristown.

Parishes.

Morristown-Billard.
Ladytown.
Old Connel.
Great Connel.

	Plough-lands.
The Hill of Allen - - -	1
The Headland of ditto - - -	2
Miltown - - - -	1
Rasberry - - - -	1½
Morristown - - - -	1½
Great Connel - - - -	4
Ladytown - - - -	1

East Ophaley.

Parishes.	*Towns.*
Thomastown.	
Part of Rathangan.	Kildare.
Kilmony.	
Dunmurry.	
Pollardstown.	
Ballymanny.	
Kildare.	
Tully.	
Ballysax.	
Carna.	

	Plough-lands.
Kildare - - - - -	3½
Tully - - - - -	¼

Maddenstown

	Plough-lands.
Maddenstown	¾
Carna	½
Martinstown	½
Brownstown	½
Ballymanny	½
Pollardstown and Loughbrowne	¾
Rathbride	½
Friartown	¼
Dunmurry	½
Feighcullen	1
Drininstown	1
Kilmoney	½
Guidenstown	¼
Grange-Clare	¼
Knocknagalla	¼
Thomastown	1
Ellistown	½

East Narragh and Rheban.

Parishes.	*Towns.*
Timolin.	Ballitore.
Fonstown.	Timolin.
Davidstown.	Calverstown.
Usk.	
Narraghmore.	

	Acres.
Usk	80
Blackrath and Shortmills	80

Ballymount

	Acres.
Ballymount - - - -	20
Inchaquire - - - -	10
Mileabbey - - - -	15
Spratstown - - - -	20
Crookstown - - - -	55
Ballitore - - - -	35
Timolin - - - -	60
Portersize - - - -	35
Inch - - - -	160
Ardscull - - - -	160
Kilmud - - - -	40
Boulabeg - - - -	20
Fonstown - - - -	40
Rathsilla - - - -	60
Narraghmore - - - -	134
Davidstown - - - -	186
Glassealy - - - -	40
Part of Monatore and Lynam's Garden -	40

Ikeathy and Oughterany.

Parishes.	*Towns.*
Cloncurry.	Kilc o
Scullogestown.	Hortland.
Clonshambo.	Donadea.
Balraheen.	
Donadea.	
Dunmorhill.	
Mainham.	
	Balraheen

	Acres.
Balraheen	100
Raheen	40
Rathcoffy	180
Painstown	180
Baltracey	140
Clonfort	100
Gragepottle	80
Mainham	220
Richardstown	140
Danielstown	47
Mount-Armstrong	60
Donadea	120
Kilnamorah	120
Cooltrim	120
Dunmorhill	180
Kilmoney	60
Clonshambo	100
Hogestown	100
Belgard	180
Scurlockstown	300
Great Cloncurry	250
Cappagh	220
Pitchfordstown	140
Killeighteeragh	80
Kill	40
Milestown	120
Newtown	80

	Acres.
Grangemore	240
Ballycahan	80
Ballycannon	120
Fannough	120
Kilmagarick	40
Ballykeelin	40
Corcoranstown	120
Ovidstown	120
Kilbride	40
Kilcock	120
Branganstown	80
Courtown	80
Port Glorium	110
Boystown	140
Grageder	30
Clonsast	80
Carogh and Roestown	180

Kilcullen.

Parishes.	*Towns.*
Kilcullen.	Kilcullen-Bridge.
Part of Tully.	
Giltown.	

	Plough-lands.
Galmerstown and Kilgowan	2
Castlemartin and Sunny-hill	1
Kilcullen	1
Moortown and Thomastown	1

Kilkea

Kilkea and Moone.

Parishes.	*Towns.*
Part of Tankardstown.	Castledermot.
Dollardstown.	
Castledermot.	
Part of Kinneagh.	
Part of Dunmanoge.	
Graney.	
Part of Painstown.	
Ballaghmoone.	
Kilkea.	

Kilkea is a parish in itself; presentation is in the Keatinge family.

	Acres.
Castledermot - - - -	160
Hoberstown - - - -	35
Ballavas - - - -	30
Hallahays - - - -	30
Ballaghmoone - - - -	60
Crookett - - - -	35
Lowermagany - - - -	7
Castleroe and Dunmanoge - -	76
Ballyhead and Ballybarney - -	20
Rumplestown and Johnstown - -	40
Ballyburne - - - -	20
Ballykillane and Newtown - -	30
Gurteen Vacan - - -	5
Dollardstown - - - -	80

	Acres.
Levitstown - - - -	80
Bray - - - - -	30
Nicholastown Radrue - - -	45
Grangemellon - - - -	80
Ardree - - - -	40
St. John's - - - -	30
Skenagun - - - -	5
Moor-Abbey - - - -	10
Bolton - - - -	30
Marshalstown - - - -	20
Grangeford - - - -	5
Newtown - - - -	10
Kilkea, Kilcrony, Ballinamona, and Killane - - - -	100
Baconstown - - - -	20
Narrabeg - - - -	20
Ballinacarrig and Fallinstown - -	20
Carrigeen - - - -	20
Corbally - - - -	25
Rathscolbin - - - -	7
Moone - - - -	120
Commonstown and Killelan - -	18
Simonstown - - - -	15
Great Belm, Little Belm, and Pill -	60
Grangenolvin and Glebe - -	54
Graney - - - -	120

Davidstown,

	Acres.
Davidstown, Huestown, Collins, and Coolrake - - - -	15
Great Birtown - - - -	60
Little Birtown - - - -	20
Mullamast - - - -	60
Ballindrum - - - -	16

North Naas.

Parishes.	*Towns.*
Whitechurch.	Naas.
Bodenstown.	Johnstown.
Cardiffstown.	
Johnstown.	
Naas.	
Tipper.	
Rathmore.	

	Plough-lands.
Parish of Naas - - - -	3
Osbertown - - - -	1
Johnstown - - - -	1
Bodenstown - - - -	2
Whitechurch - - - -	1½
Tipper - - - -	2½
Rathmore - - - -	2½

North

North Salt.

Parishes.	*Towns.*
Lanaghbryan.	Maynooth.
Confoy.	Leixlip.
Tagadoe.	Celbridge.
Leixlip.	
Kildraught.	
Killadoon.	
Straffan.	

Tagadoe is a parish in itself; presentation is in the city of Dublin; it has no church.

	Acres.
Leixlip - - - -	560
Confey - - - -	360
Part of Janetstown - - -	20
Part of Allenswood - - -	40
Collinstown - - - -	120
Kilmacrodock - - - -	180
Parjenstown - - - -	20
Castletown - - - -	180
Celbridge - - - -	240
Moortown - - - -	60
Oldtown - - - -	50
Killadoon - - - -	120
Ballymanny, Sandstown, and Tyrow -	100
Possextown - - - -	120
Ardrass - - - -	240
Derrinstown - - - -	30

Cormackstown

	Acres.
Cormackstown - - - -	59
Treadstown - - - -	40
Ballycurraghan - - - -	20
Great and Little Maws - - -	100
Mooney-Cooley - - -	140
Griffenrath - - - -	120
Ballygoran - - - -	120
Borrogestown - - - -	120
Dowdstown - - - -	40
Roanstown - - - -	40
Blakestown - - - -	80
Syons - - - -	60
Ravensdale - - - -	40
Carton - - - -	240
Kellystown and Creestown - -	160
Smithstown and Johninstown - -	100
Ovestown - - - -	80
Clonough - - - -	60
Gragesallagh - - - -	80
Kealstown - - - -	80
Gragelin - - - -	40
Tagadoe - - - -	80
Bryanstown - - - -	36
Windgates and Gragefin - -	90
Newtown M'Cabe - - -	80
Corbally - - - -	60
Toolstown - - - -	60

Turnaharry

	Acres.
Turnaharry - - - -	50
Roosks - - - -	60
Coanstown - - - -	40
Larrytryan and Ballyhays - -	120
Coinstown - - - -	70
Donoughstown - - - -	60
Maynooth - - - -	500
Newtown - - - -	80
Donoughmore - - - -	60
Waterstown - - - -	60
Straffan - - - -	300
Jershtown - - - -	180
Barberstown - - - -	180
Baybush - - - -	80

South Naas.

Parishes.	*Plough-lands.*
Part of Kill parish.	
Killishee.	
Carnalway.	
Collanstown.	
Geaganstown.	
Killishee - - - -	$3\frac{3}{4}$
Carnalway - - - -	$2\frac{3}{4}$
Collanstown - - - -	1
Gilltown - - - -	2
Geaganstown - - - -	2

South

South Salt.

Parishes.	*Towns.*
Lyons.	Kill.
Castledillon.	
Cloghnallis.	
Oughterard.	
Kilteel.	
Kill.	

	Plough-lands.
Saint Woolstan's - - -	$\frac{3}{8}$
Dansfield and Cunnyborough - -	$\frac{1}{12}$
Loughlinstown - - -	$\frac{2}{8}$ & $\frac{1}{12}$
Raves - - - - -	$\frac{1}{12}$
Simonstown - - - -	$\frac{2}{8}$ & $\frac{1}{12}$
Donnycompart - - -	$\frac{1}{12}$
Coolfitch - - - -	$\frac{1}{32}$
Newtown - - - -	$\frac{2}{8}$ & $\frac{1}{12}$
Ballymadruagh, Heirscourt, and Stacumney	$\frac{2}{8}$
Ballscot - - - -	$\frac{1}{12}$
Castledillon - - - -	$\frac{3}{8}$
Friartown - - - -	$\frac{1}{32}$
Tipperstown - - - -	$\frac{2}{8}$
Syons - - - -	$\frac{2}{8}$ & $\frac{1}{12}$
Ardclogh - - - -	$\frac{1}{32}$
Dangan - - - -	$\frac{1}{32}$
Oughterard - - - -	1
Castlewarden - - - -	$\frac{3}{8}$
Bishopscourt - - - -	$\frac{3}{8}$

	Plough-lands.
Huttonreed - - - -	$\frac{5}{8}$ & $\frac{1}{16}$
Collinhill and twelve-acres - -	$\frac{1}{16}$
Clonallis and Ballycommon - -	$\frac{1}{8}$
Kill - - - -	$\frac{1}{8}$
Painstown - - - -	$\frac{2}{8}$
Hartwell - - - -	$\frac{1}{16}$
Broguestown - - - -	$\frac{2}{8}$
Fodeens - - - -	$\frac{1}{32}$
Alasty - - - -	$\frac{2}{8}$
Kilteel - - - -	1
Blackchurch - - - -	$\frac{1}{8}$
Kilwarden - - - -	$\frac{2}{8}$
Cromwelstown - - -	$\frac{1}{8}$
Great Forenaughts - - -	$\frac{1}{32}$
Little Forenaughts, Harperstown, and Bathland - - - -	$\frac{5}{8}$

West Ophaley.

Parishes.	*Towns.*
Part of Rathangan.	Rathangan.
Monasterevan.	Monasterevan.
Donanea.	
Kildangan.	
Walterstown.	
Nurney.	
Ballysonnon.	
Kilrush.	

Monasterevan

	Plough-lands.
Monasterevan	$2\frac{1}{2}$
Rathangan	$2\frac{1}{4}$
Lacka	1
Dunnany	1
Knavenstown	$\frac{1}{4}$
Kilrush	1
Ballysax	1
Ballykelly	$\frac{1}{2}$
Kildangan	$\frac{1}{2}$
Walterstown	$\frac{3}{4}$
Nurney	$\frac{1}{2}$
Ironhills	$\frac{3}{4}$
Ballyshannon	$\frac{3}{4}$

West Narragh and Rheban.

Parishes.	*Towns.*
Kilberry.	Athy.
Churchtown.	
St. John's.	
St. Michael's.	

	Plough-lands.
Rheban	2
Woodstock	1
St. John's	$\frac{1}{2}$
St. Michael's	$\frac{1}{2}$
Tullagory	1
Shrowland	$\frac{5}{6}$
Skeriss	$\frac{5}{6}$
Bert, Kilberry, and Clony	$\frac{7}{6}$

The modus for going-out tenant is to pay an eighth sheaf of winter corn left growing on the land, and a fourth of all spring crops; all pen or peel fallow crops sowed in winter, as also all broken up lay, and every crop which has not had previous and usual preparation, though sowed in winter, must be deemed a spring crop, and pay a fourth.

All potatoe crops, which have been amply dunged or manured, are exempt from sheaf, it being considered, that the going-out tenant is for his dung entitled to a clear crop and away.

All grand jury cesses chargeable on land are to be paid by the coming-in tenant; he only will derive benefit from the money expended on roads, bridges, &c. &c.

Where a single ditch is the boundary, the entire bank and six feet of gripe are measured on the division, to which the back of the ditch is turned; all trees and hedges extract their nourishment from the bank, and are by right the property of the tenant or proprietor, whose soil they occupy.

ADDENDA.

ADDENDA.

CHEESE. In the best cheese countries of England, one-third of the curd of this day is reserved to break up, and mix with two-thirds of to-morrow's; in this the superior excellence of English cheese is supposed principally to consist.

Stilton-cheese. Take the night's cream, put it to the morning's milk with the rennet; when the curd is come, it is not to be broken, as with other cheeses, but taken on a dish all together; place it in a sieve to drain gradually, and, as it drains, gently press until it becomes firm and dry; place it in a wooden hoop, to be afterwards kept dry on boards, turned frequently with cloth binders round it, which are to be made tight as occasion requires; the cloth to be changed every day, until the cheese becomes firm enough to support itself; after the cloth is removed, rub well every day with a brush, in damp weather twice a day.

Fresh butter. Cows fed with vegetables, (turnips or any decayed leaves in particular) will communicate

cate a rancid taste to their butter. Dissolve half an ounce of nitre in a quart of cold boiled water; a small tea-cup-full of the nitrous water applied to eight gallons of milk, warm from the cow, and stirred in, will relieve the milk and butter from all faulty taste.

To preserve butter in crocks fresh and sweet. To ten ounces of common salt add two ounces of saltpetre, and two ounces of brown sugar; beat and blend well together; when butter is prepared for salting, to each pound of butter add one ounce of the above; work it very well into a mass, and close for keeping.

It should not be used for three weeks; it will keep for years without being too salt, hard, or brittle; it gives the butter a rich marrowy consistence, and fine colour.

Bacon equal to Westphalia hams. Hang your pork for six or eight days, (without cutting up) or so long as the weather will permit its keeping; when broken up, rub very dry, and apply the above composition by hand rubbing it twice; put into press, and turn every day for a fortnight; hang up to dry.

Hanged beef, should be treated in the same manner.

If a pickle be made of the above composition, boiled and well scummed, and the meat intended for hanging, when cut up, placed in it, it will be as well

well saved as by hand-rubbing; but care must be taken at least once a month to re-boil scum, and renew this or any other pickle; it should be quite cold.

Potatoe starch and hair powder. Grate raw potatoes fine, infuse in cold water, pass through a sieve, and filter through a streamer; wash with pure water repeatedly, until no discolour on the water appears; done in one day; when dried in the sun, fit for immediate use; care must be taken that it be very dry before packing up for keeping; with an equal quantity of wheat-flour, it makes the nicest seed-cakes or bread.

Sugar from Beet-root. Pound the roots in a mortar, and press out the juice, which is to be clarified with lime, like the sugar-cane, by evaporation bring it to the consistence of syrup; from one hundred pounds of raw sugar, thus obtained, eighty pounds of well crystallized sugar are obtained by the first refining, equal to any from the West Indies. The operation takes but two days.

Currant wine. To six gallons of ripe currants put four gallons and a half of water; bruise and squeeze out the juice; steep a second time in other four gallons and a half of water; strain through a flannel bag; to each gallon of liquor add three pounds of Jamaica sugar; strain again through a flannel bag; place it in a tub in a very warm room,

to

to promote fermentation; when it is over, tun into a well sweetened vessel; add the whites of three eggs to every twelve gallons; bung close; in six months it may be bottled, first putting a small quantity of prepared isinglass into the cask ten days before you bottle.

Gooseberry wine. To every gallon of ripe gooseberries put a gallon of soft water; mash the fruit well; let it stand for twenty-four hours; squeeze and strain through a sieve and flannel bag; to every gallon of liquor add three pounds of sugar; strain a second time; treat it as above.

Ginger wine. Take fourteen gallons of soft water, fourteen lemons, fourteen pounds of brown sugar, and a quarter of a pound of bruised ginger; boil the water, sugar, and rind of the lemons, whilst any scum will rise; when cold, tun into a sweet cag, adding the lemon juice, and a few spoonfuls of good barm; when the fermentation is over, stop close; fit for use in a month.

Vinegar. To each gallon of boiled water add one pound of common sugar, and one pound of white currants picked clean; place in a tub, and add a few spoonfuls of barm; when the fermentation is over, tun and cover the bung with a piece of glass; place the cask in a situation, where the sun may have full power for two months.

The

The Grand and Royal canals have immense quantities of very fine marly gravel lying on their banks totally useless, and a great encumbrance; these banks, if turned over, would furnish sufficient limestones, which, if burned, would be an excellent mixture with the marly gravel, as is already recommended in the course of the work. The banks, if so treated, would form a most excellent manure for at least twenty thousand acres; and its removal would improve the banks, and prevent the hasty filling of the canals with stones, gravel, &c. &c.

Experience has proved, that one bank of these canals is sufficient for all the purposes of navigation: then why should the other be idle? If it was well planted, it would be a most useful and profitable improvement, and greatly ornament the country. Often in time of stormy weather, if the wind takes across the canal, the progress of the boats is greatly retarded; if one side was closely planted, it would ease all difficulty; as a close plantation would prevent the current of air from annoying the boat, it would stop its effects in a great measure. Planting without protection is absurd. If cabins were built at a mile asunder, and a part of the blank side of the canal laid out for potatoe gardens, at a small salary old pensioned soldiers would be proud of such a situation, and could most easily protect half a mile on either side of the cabin; the profit, by a due inter-

mixture of osiers, would in a few years pay all expence, and leave a great fund of future wealth; and surely the neat improved appearance of the canal should be enough, if there was no other temptation, to induce liberal spirited directors to adopt the scheme.

Seed-corn, &c. Many experiments go to prove, that one-half of the seed-corn expended in Ireland is thrown away.

Mr. Burton, of Burton-hall, has been in the habit of fallowing every year a portion of his demesne for wheat and grasses; several years since he began with twenty stones of wheat to the acre; he has been year after year decreasing his quantity of seed, until he brought it under ten stones, and, as he decreased his seed, his crops increased in value. Numberless instances could be adduced to prove the great saving it must be, if but half the quantity of seed were used.

Mr. Gore, of Barrowmount, county of Kilkenny, had this year wheat in drills of six, nine, and twelve inches apart; the twelve inch drills left more room for the cultivation of the intervals, and were most productive; he had upwards of sixteen barrels an acre, and of the very finest quality.

The great value of marly gravel on grass is not sufficiently attended to; the Reporter has a piece of his lawn long in grass, which had been let out in great open furrows; he filled these last November with

with marl-gravel to level the land, sowed with hay-seeds, and then manured the whole; the sward, where the gravelled furrows are, could scarcely be cut by the mower, and was much heavier than the part, where the gravel did not cover.

The use of a roller has not been sufficiently noticed; no farmer should be without one; after every stroke of the harrow, it should be generally used; in cultivating land, the more it is reduced to garden fineness, the better the operation; nothing will so cheaply attain this end as repeated rolling; all winter crops of wheat should be pressed into the earth in the month of March, and for oats and barley it is of the greatest use; for wheat in small ridges, a roller may be constructed very full in the middle, and small to the ends to meet the shape of the ridge; this will compress the furrow and the sides of the adjacent ridges at the same time. Any person, who will take the trouble to examine, will find, that the winter rains have closed and lowered the earth from the wheat plants, leaving the upper roots bare; if these are not covered by *top-dressing*, it is most necessary they should be pressed into the surface-earth, where they will take fresh root. A simple cheap roller, within the reach of every farmer, may be constructed with an old outside car; (this is called so, where the shafts are outside the wheels, which work with gudgeons;) strip off the

iron and pin-planks round the wheels; on the car-body any necessary weight may be placed: to those, who will not go to greater expence, this may be of use.

One year's seeding,
Seven years weeding.

There is nothing the Irish farmer is so inattentive to, as keeping his crops clean; the common practice is, to leave the docks, thistles, &c. &c. &c. growing with the corn, until both are nearly ripe; then men attempt the weeding by trampling through the corn, and cutting the weeds with a reaping-hook and forked stick; others leave them until reaping day, and then at much delay and expence steal the corn from amongst the weeds, leaving a prosperous crop of thistles to complete the ripening, and share its winged seed with all the neighbourhood. All this great mischief is prevented by cutting all weeds, when a foot high, with a broad chisel, one inch and a half under the surface; the root will then bleed and die: docks should be deferred until in blossom; if the roots be then cut under the surface, there is an end of their vegetation, and the great trouble with docking-irons, &c. &c. will be saved.

The Scab in sheep, is a cutaneous disorder affecting the outer skin, and to be cured by any application, which will kill the thousands of live insects abounding in every scab; it is communicated by an infected

fected sheep rubbing against any stone, bank, or post, and there dropping some of the nits, which stick to the wool of a sound sheep, which may happen to touch the same place; only one of these nits getting hold of a hair will speedily travel to the skin, where it burrows; its effects first appear in a corrupted boil, which, when ripened and dry, disperses thousands to propagate their baneful brood.

Every shepherd knows how to cure by sundry recipes; but sloth and indolence, the parents of most diseases, prevent their exertions; in this case an oak stick, smartly applied on and about the shepherd's shoulders, has often been known to effect a cure. Where the disorder has attained a footing, it will not easily be got rid of, except every sheep be dressed one by one, as the insects must be killed in the wool of the apparently sound sheep. A water long in use is thus made; one ounce of cor. sub.; half a pint of spirit of turpentine; dissolve the cor. sub. well in a mortar with the spirit; add two quarts of strong lime water, and eight quarts of rain water; let the whole stand for some days near a fire in a jar, frequently stirred; apply as other sheep-water, breaking the scab, but not using a knife.

Any preparation of tar is an infallible remedy for the scab; the Reporter has long given it the preference. Oil of tar (avoid coal tar brown) can be purchased from any of the druggists at from two to three shillings per

per gallon; it is to be had rectified at Boileau's, Bride-street, at four shillings and four pence; if the common is purchased, it should be boiled over a slow fire, and well scummed, to prevent all discolouring of the wool: where a scab appears, a few drops of oil of tar to wet it effectually kill all the brood; but it will be necessary to put three rows of tar-water along the back and sides of every sheep, which is best prepared by two parts of brine, and one of oil of tar; the use of this, with a little attention, will soon effect a cure, but *every sheep must be dressed.*

The Reporter got, with his present residence, five horses so infected with mange, that they had not one hair on tail or mane; he had them well curried, and a pint of tar oil made into ointment with hog's lard well rubbed into each horse; they were instantly cured.

Its drying and healing qualities are very great; the ointment is effectual in curing swelled or cracked heels in horses in the worst stage; a few drops will dry and heal any ulcer or loss of skin in horses.

A ewe staked in the udder was, when shearing, found so putrid and full of maggots, that her entrails seemed to be in a state of mortification; two spoonfuls of tar oil were applied, which instantly destroyed all the maggots, dried and healed all the putrid parts, and

and in a month she was as well as could be wished.

Tar oil and brine, applied on the backs of lambs, will effectually preserve them from maggots, flies, &c. &c.

Transplanted and drilled wheat. It is near a century since Tull, the father of drill husbandry, laboured to introduce his practice amongst his countrymen; for many years he was enabled, without manure, to keep the same land under abundant crops of wheat, by drilling and clean cultivation. In the decline of life, being much afflicted with bodily infirmity, he was obliged to submit the management of his farming to servants; of course, his work was neglectfully performed, and his crops decreased in proportion to the negligence; this gave opportunities to many to decry his practice. After trial of other systems, every principle he recommended is coming into general practice on the best conducted farms of England or Scotland; his drilled turnip culture has nearly exploded the hand-hoeing of Norfolk, and dibbling must shortly give place to drilled wheat. The propensity to grass throughout Ireland makes drilling still more necessary here than in Great Britain; the nearer our field comes to our garden practice, the cleaner, mellower, and more productive will be our soils; no crop should be in garden culture, except in drill; no crop should

be

be undrilled in field culture with those, who seek perfection.

Mr. Tull, Dublin edition, 1733, page 117, speaking of the best kinds of wheat, says, "There is a "sort of wheat, called by some Smyrna wheat; it "has a prodigious large ear, with many lesser or "collateral ears coming all round the bottom of this "ear; as it is the largest of all sorts of wheat, so "it will dispense with the nourishment of a garden, "without being over-fed, and requires more "nourishment than the common husbandry will "afford it, for there its ears grow not much bigger "than the common wheat; this I believe to be the "very best sort for the hoeing husbandry; next to "this I esteem the white cone wheat, and then the "grey cone, but look upon this to be the best."

The Reporter considers the wheat, described by Mr. Tull, to be the same as that called Jerusalem wheat, which was lately in so much request, as to sell for ten guineas per stone: it was rapidly sought after, and almost as rapidly thrown aside, perhaps from unskilful management. Some experiments, though on a small scale, and not as fully attended to as might be wished, made by Mr. Grattan of Athy, greatly merit attention.

In June, 1804, Mr. Grattan dibbled eighty-five grains of Smyrna wheat in his garden.

On

On August 14th, he took up all the plants, divided them, and transplanted at eight inches asunder; the number of subdivided plants, two hundred and sixty-four.

On October 8th, he took these up, and subdivided; amount three hundred and seventy-one, which he put down at twelve inches apart.

On the 27th of March, he took up and transplanted, at twelve inches apart, four hundred and twenty-one sets; these he kept clean by flat hoeing during the summer.

On the 11th of September, 1805, he reaped eight pounds.

On the 30th, he sowed the eight pounds by dibbling in rows of twelve inches, and four inches from hole to hole, putting a small quantity of soot into each hole, as the former sowing was much injured by the red worm; during the summer he flat-hoed the intervals; the crop escaped the worm, but was in an over-sheltered situation.

On the 18th of August, 1806, he cut twenty-two pounds, seven ounces.

On the 17th of October, he dibbled seventeen pounds of wheat in rows of one foot, as before, occupying half a plantation acre of land, that had borne drilled potatoes; this unhoed produced six barrels.

On the 26th he had six drills made, eighteen inches apart, with the common plough, in which he

sowed by hand five pounds, seven ounces of the Smyrna wheat; the land occupied, measured five perches and a half.

At the same time he sowed six other drills of the same extent, and treated as the other, with eight pounds of best red lammas wheat; both were covered in by rakes; the twelve drills were left without any attention, save hand-weeding.

On the 2d of September, 1807, the drills were cut; the produce of each, the wheat, the flour, the bran, and the bread were most accurately examined by fourteen gentlemen of much respectability, deputed by the Farming Society of Athy; the result of their inquiries is,

That the produce of six drills, containing five perches and a half, sowed with eight pounds of red lammas wheat as above, produced eight stones, eleven pounds, which is at the rate of twelve barrels, fifteen stones per plantation acre.

That the same quantity of land, treated in the same manner, sowed with five pounds seven ounces of Smyrna wheat, produced eleven stones, or at the rate of sixteen barrels per acre.

That four hundred and fifty-three grains of the Smyrna wheat, and five hundred and thirty-seven of the red lammas weighed one ounce each.

That

That the Smyrna wheat produced nearly double the quantity of straw, besides the excellence of its nutritious pithy stalk.

That a stone of the Smyrna produced one pound less bran than a stone of the red lammas.

That the bread made of each is of equal quality, and that the cultivation of the Smyrna wheat in drill is an object *well worthy the pursuit of the Irish farmer.*

Here, so far as it goes, is much encouragement to the pursuit of drill husbandry. Much praise is due to Mr. Grattan for his most laudable exertions; without intending in any degree to lessen his merit, it must be remarked that, if his intervals had been repeatedly stirred with plough and hoe every time he earthed, he would, as by transplantation, have increased the size of his wheat stools; and little doubt remains, but by careful *garden management* twenty barrels of Smyrna wheat may be raised off one acre, without injuring or exhausting the ground; the frequent stirring of the intervals returning as much nutriment to the soil from the air, as the wheat crop would draw from it.

The Reporter has made many successful trials of wheat in drill; he recommends a double drill on a three feet ridge, twelve inches apart; this will leave two feet intervals to be worked with the furrow-plough; when the wheat drills are sufficiently horse-

hoed and hand-hoed, a crop of turnips may be drilled in the intervals, or rape or cabbage may be transplanted with success; or the three feet ridges may be reversed, and a double drill of wheat put in the soil of the intervals, which will then become the centre of the new ridge. Nothing is here recommended, but what he has repeatedly tried: the plough he has used is the furrow-cutter, described as before in the course of the Survey; it cuts up weeds, and stirs the soil to a good depth; a small triangle-harrow may be attached to its tail, which will break lumps, and bring all weeds to the surface, where they perish.

The transplanting of wheat should get every fair trial; in wet seasons, potatoes are long in ripening, and are got out too late to put in wheat; those, who fear to sow wheat in spring, should have a rich bed prepared, on which wheat should be thickly sowed; one rood would produce plants and off-sets for twenty acres, drilled as above recommended; a light double furrow, made on the top of the three feet ridge, will receive the plants, which may be covered in by drawing back the earth thrown out of the furrows with broad hand-hoes.

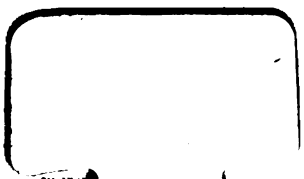
Epitaph

Epitaph in the church-yard of Johnstown.

Tread soft ye mortals o'er this hallow'd ground;
Full many gentle villagers here rest,
Who till'd in days of yore the fields around,
With calm content, and humble virtue bless'd.

Go, seek the flow'ry paths of peace they trod,
From guilt, ambition, and from envy free;
Like them, thy neighbours love, adore thy God,
And for thy race provide with industry.

So may you then, when fate shall seal your doom,
And you beneath the grass-grown sod shall lie,
Like them, enjoy the sabbath of the tomb,
Like them, ascend to endless bliss on high.

ΠΑΝΤΑΧΟΥ

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